JVC

SERVICE MANUAL

COLOUR VIDEO CASSETTE RECORDER VHS PAL

HR-D565E/EG/EK

SPECIFICATIONS

Format : VHS PAL standard with Hi-Fi audio
Video recording system : Rotary two-head helical scan system
Hi-Fi audio recording system : Deep-layer recording system conforming to stereo Hi-Fi VHS standard
No. of audio channels : 2 Hi-Fi audio channels
2 normal audio channel
Video signal system : PAL colour and CCIR monochrome signals, 625 lines
Tape width : 12.65 mm
Tape speed : 23.39 mm/sec
Maximum recording time : 240 min, with E-240 video cassette
Temperature
Operating : 5°C to 40°C
Storage : −20°C to 60°C
Power requirement : 220 V ~, 50/60 Hz (E/EG)
240 V ~, 50/60 Hz (EK)
Power consumption : 40 W (E/EG), 35 W (EK)

Video

Input : 0.5 to 2.0 Vp-p, 75 ohms, unbalanced
Output : 1.0 Vp-p, 75 ohms, unbalanced
Signal-to-noise ratio : 43 dB (Rohde & Schwarz noise meter) with PICTURE SHARPNESS control at centre position
Horizontal resolution : 250 lines with PICTURE SHARPNESS control at centre position

Audio

Input (E/EG) : Mic: −67 dBs, high impedance, unbalanced
AUDIO IN connector (RCA × 2):
−20 dBs, 50 k-ohms, unbalanced
AUDIO/VIDEO socket
(21-pin Peri connector):
−3.8 dBs (CENELEC standard),
50 k-ohms, unbalanced
Input (EK) : Mic: −67 dBs, high impedance, unbalanced
Lin: −20 dBs, 50 k-ohms, unbalanced
Output level (E/EG) : AUDIO/VIDEO socket (21-pin Peri connector): −3.8 dBs (CENELEC standard), high impedance load
AUDIO OUT connector (RAC × 2):
−6 dBs, high impedance load
Output level (EK) : −6 dBs, high impedance load
Output impedance : Less than 1 k-ohm, unbalanced
Signal-to-noise ratio : More than 40 dB
Frequency range : 70 Hz to 10,000 Hz

Hi-Fi audio

Frequency response : 20 Hz−20,000 Hz
Dynamic range : More than 80 dB
Wow and flutter : Less than 0.005% WRMS

TV tuner/RF section (E/EG)

Channel storage capacity : 32 channels
Aerial input : VHS band I, 47−111 MHz
VHF band III, 111−300 MHz
UHF band IV/V, 470−862 MHz
Aerial output : UHF channels 32−40 (Adjustable)

TV tuner/RF section (EK)

Channel storage capacity : 16 channels
Aerial input : UHF band IV/V, channels 21−69
Aerial output : UHF channels 32−40 (Adjustable)

Digital clock/timer

Clock display : 24-hour fluorescent digital display with day and date indication
Reference frequency : Quartz controlled
Start time setting : Within one year
Programming capacity : 4 programmes
Dimensions : 435 mm (W) × 95 mm(H) × 376 mm(D)
Weight : 7.9 kg
Provided accessories : Aerial cable, Cassette tape,
Infrared remote contorl,
"R6"-size battery × 2,
Audio cable (RCA-RCA)

E. & O.E. Design and specifications subject to change without notice.

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No. 8413
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NOTE: For a technical description, please refer to Technical Guide T-8037 HR-D565 PAL.

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Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (░) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

4. Use specified insulating materials for hazardours live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

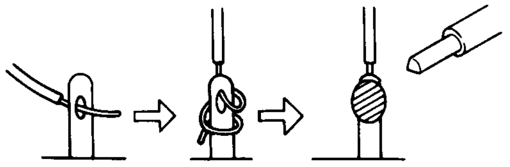


Fig. 1

6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10—15 kg of force in any direction will not loosent it.

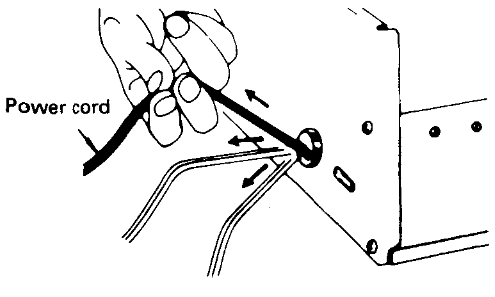


Fig. 2

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission form the cathode ray tube.

11. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perfomr carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

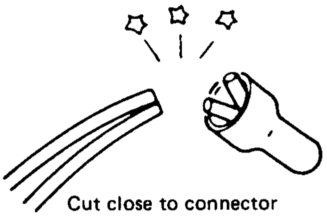


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

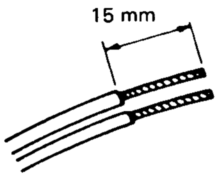


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

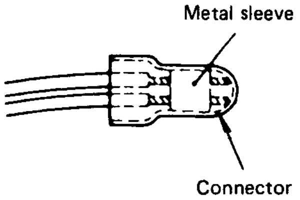


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

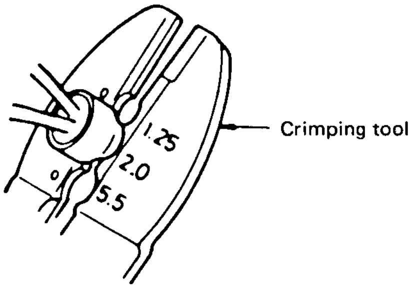


Fig. 6

(5) Check the four points noted in Fig. 7.

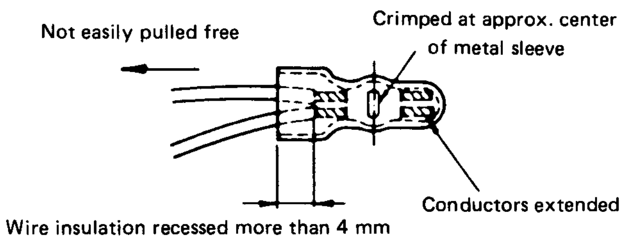

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, performe the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.
2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See tabel below.
3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

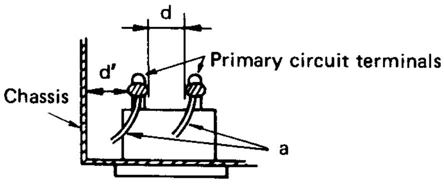


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

   Measuring Method: (Power ON)
   Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

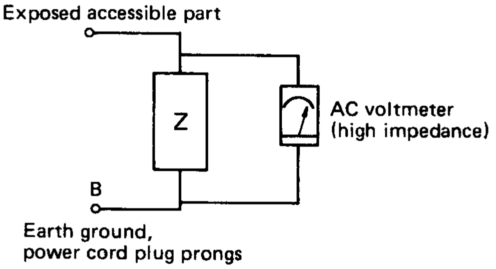


Fig. 9

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	≧ 1 mΩ/500 V DC	1 kV 1 minute	≧ 3 mm
110 to 130 V	USA & Canada	–	900 V 1 minute	≧ 3.2 mm
*110 to 130 V 200 to 240 V	Europe Australia	≧ 10 mΩ/500 V DC	4 kV 1 minute	≧ 6 mm (d) ≧ 8 mm (d') (a: Power cord)

*Class II model only.

Table 1 Ratings for selected areas

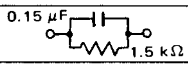
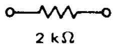
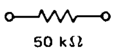
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (b) to:
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	 0.15 µF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe Australia	 2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		 50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current ratings for selected areas

Note: This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS: Hi-Fi STEREO VIDEO CASSETTE RECORDER

For reference, the text of the Instruction booklet for this model is reproduced in the following pages.

Numbering of the pages also corresponds with that of the booklet.

The Instructions shown pertain specifically to the Model HR-D565E. For detailed descriptions, be sure to consult the Instruction booklets of the other models.

Main differing points with respect to other models in this series (with suffixes E, EG and EK) are also included.

The following table lists the principal differing points among the models (suffixes E, EG and EK) in this series.

Model **Item**		**E**	**EG**	**EK**
AC power voltage		220 V∿	←	240 V∿
Video connector terminal	IN	AUDIO/VIDEO SOCKET (21-pin)	←	BNC
	OUT			BNC
AUDIO/VIDEO socket (21-pin Peri connector)		Yes *1) & *2)	Yes *1) & *2)	No
	Audio in level	−3.8 dBs	←	*1)
	Audio out level	−3.8 dBs	←	
TV-Tuner	Channel storage capacity	32 channels	←	16 channels
	Aerial input [MHz]	VHF I : 47−111 VHF III : 111−300 UHF IV/V : 470−862 *3)	← *3)	UHF IV/V channels 21−69
	Sound-multiplex	Yes *4)	Yes *4)	No
	AFC button	Yes	Yes	No *5)
VP system		Yes	Yes	No

Notes:

← : Same as model at left

*1) Input levels of the AUDIO LINE IN (RCA) connectors are −20 dBs.
The output levels of the MIXED AUDIO OUT (RCA) connectors are −6 dBs.

*2) CAUTION:
Audio dubbing is not possible with an audio source connected to the rear panel AUDIO LINE IN (RCA) connectors.

*3) VHF band I : Channels E2−E4, S1−S3, M1−M2 in Belgium,
Channels E2−E4, X, Y, Z, S1−S2 in Switzerland,
Channels E2−E4, S21−S23, S1−S2 in West Germany
VHF band III : Channels M3−M10, E5−E12, U1−U10 in Belgium,
Channels S3−S10, E5−E12, S11−S20 in Switzerland/West Germany
UHF band : Channels 21−69

*4) These models are provided with BILINGUAL/STEREO indicators and BILINGUAL (REC) select switch.

*5) AFC circuit is included; normally employed in ON state.

Thank you for purchasing the JVC HR-D565E Hi-Fi Stereo Video Cassette Recorder. Before use, read this instruction booklet carefully for obtaining the best results from your new unit.

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SAFETY PRECAUTIONS

The rating plate and the safety caution are on the rear of the unit.

WARNING – DANGEROUS VOLTAGE INSIDE
WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

IMPORTANT (In the United Kingdom)
Mains Supply (240 V∿, 50 Hz only)

IMPORTANT

Do not make any connection to the Larger Terminal coded E or Green. The wires in the mains lead are coloured in accordance with following code:

Blue to N (Neutral) or Black
Brown to L (Live) or Red

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured Black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt – consult a competent electrician.

Note
We recommend that you should disconnect the AC cord from the outlet.

CAUTION

- Disconnect the mains plug from the supply socket when not in use.
- When you are not using the HR-D565E for a long period of time, it is recommended that you disconnect the power cord from the AC outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or aerial.

FOR YOUR SAFETY (in Australia)
Install any external aerial to AS 1417.1

Omkopplaren OPERATE på denna apparat är sekundärt kopplad och skiljer inte apparaten från nätet i läge OPERATE OFF.

The OPERATE button does not completely shut off mains power from the unit, but switches operating current on and off.

BEMAERK: I stilling OFF er apparatet stadig forbundet med lysnettet Hvis det ønskes fuldstændig afbrudt skai netledningen traekkes ud.

This equipment has been produced to comply with Directive number 82/499/EEC.

VHS
PAL

Only cassettes marked "VHS" can be used with this video cassette recorder.

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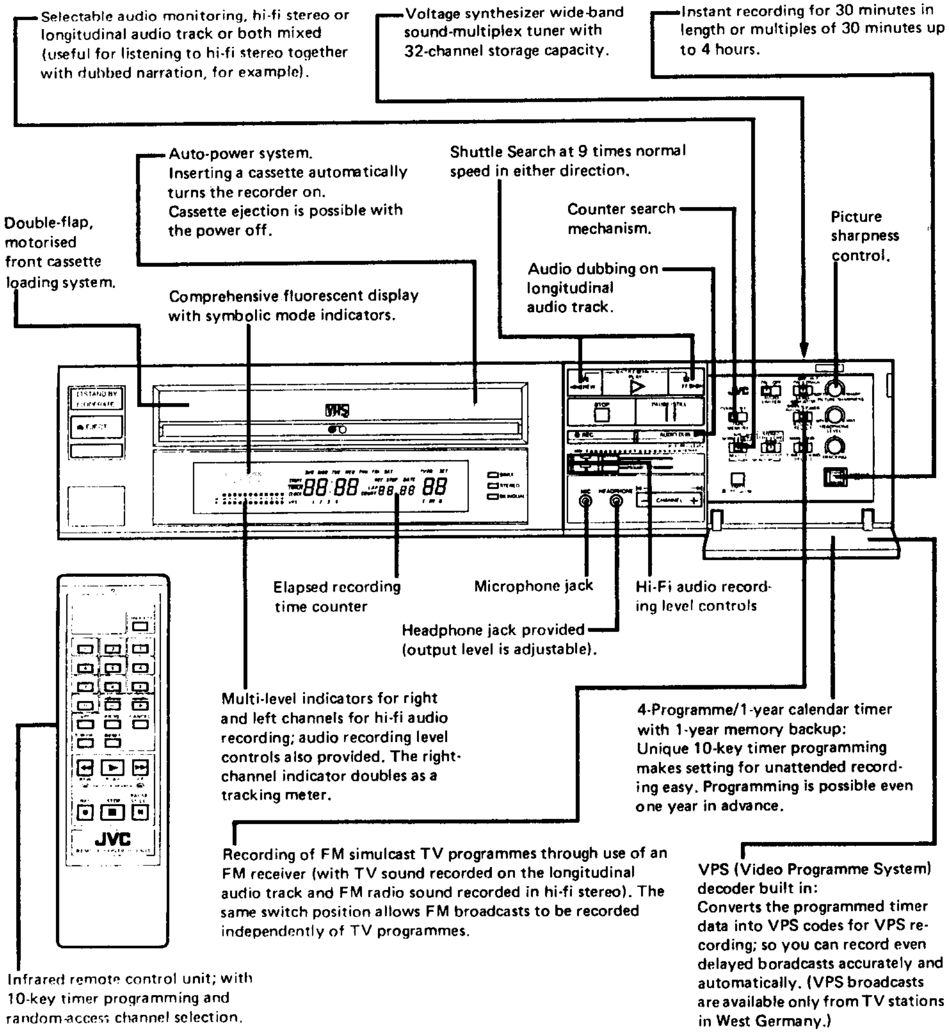
FEATURES

Stereo video recorder conforming to the Hi-Fi VHS format, assuring high-quality sound recording and playback with independent rotary audio heads exclusively for hi-fi audio recording and playback.



Selectable audio monitoring, hi-fi stereo or longitudinal audio track or both mixed (useful for listening to hi-fi stereo together with dubbed narration, for example).

Voltage synthesizer wide-band sound-multiplex tuner with 32-channel storage capacity.

Instant recording for 30 minutes in length or multiples of 30 minutes up to 4 hours.

Auto-power system. Inserting a cassette automatically turns the recorder on. Cassette ejection is possible with the power off.

Shuttle Search at 9 times normal speed in either direction.

Double-flap, motorised front cassette loading system.

Counter search mechanism.

Picture sharpness control.

Audio dubbing on longitudinal audio track.

Comprehensive fluorescent display with symbolic mode indicators.

Elapsed recording time counter

Microphone jack

Hi-Fi audio recording level controls

Headphone jack provided (output level is adjustable).

Multi-level indicators for right and left channels for hi-fi audio recording; audio recording level controls also provided. The right-channel indicator doubles as a tracking meter.

4-Programme/1-year calendar timer with 1-year memory backup: Unique 10-key timer programming makes setting for unattended recording easy. Programming is possible even one year in advance.

Recording of FM simulcast TV programmes through use of an FM receiver (with TV sound recorded on the longitudinal audio track and FM radio sound recorded in hi-fi stereo). The same switch position allows FM broadcasts to be recorded independently of TV programmes.

Infrared remote control unit; with 10-key timer programming and random-access channel selection.

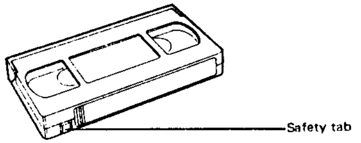
VPS (Video Programme System) decoder built in: Converts the programmed timer data into VPS codes for VPS recording; so you can record even delayed boradcasts accurately and automatically. (VPS broadcasts are available only from TV stations in West Germany.)

- Slim, super-low-profile design – 95 mm in height.
- Audio-only recording of up to 4 continuous hours – never possible with audio cassette tapes – on the hi-fi audio track.
- Full-logic tape transport control system.
- Direct-drive head drum motor for higher stability and reliability.
- Dimmer control provided on the timer control panel.
- Automatic backspace recording for assemble edits.
- Automatic rewind at the end of tape.
- 21-pin Peri connector for A/V connection to a stereo television.

PRECAUTIONS

Handling and storage
- Avoid using the recorder under the following conditions:
  - extremely hot, cold or humid places,
  - dusty places,
  - near appliances generating strong magnetic fields,
  - places subject to vibrations, and
  - poorly ventilated places.
- Be careful of moisture condensation.
  Avoid using the recorder immediately after moving from a cold place to a warm place or soon after heating a room which was cold. The water vapour in warm air will condense on the still-cold video head drum and tape guides and may cause damage to the tape and the recorder.
- Handle the recorder carefully.
  - Do not block the ventilation openings.
  - Do not place anything heavy on the recorder.
  - Do not place anything which might spill and cause trouble on the top cover of the recorder.
  - Use in horizontal (flat) position only.
- In case of transportation,
  - Avoid violent shocks to the recorder during packing and transportation.
  - Before packing, be sure to remove the cassette from the recorder.

Video cassettes
- This recorder employs VHS-type cassettes only.
  E-240 for 4 hours, E-180 for 3 hours, E-120 for 2 hours, E-90 for 1 hour and 30 minutes, E-60 for 1 hour and E-30 for 30 minutes of recording.
- Video cassettes are equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording cannot be performed. If you wish to record on a cassette whose tab has already been removed, use adhesive tape to block the hole.



- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid extreme humidity, violent vibrations or shocks, strong magnetic fields (near a motor, transformer or magnet) and dusty places.
- Place the cassettes in cassette cases and position vertically.

Moisture condensation
- If you pour a cold liquid into a glass, water vapour in the air will condense on the surface of the glass. This is called moisture condensation.
- Moisture condensation on the head drum, one of the most crucial parts of the video recorder, will cause damage to the tape.
- Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, after heating a cold room or under extremely humid conditions.
- This recorder is equipped with a moisture condensation prevention circuit which automatically heats the head drum according to the ambient temperature. This circuit operates when the unit is plugged into an AC outlet.
- The moisture condensation prevention circuit consumes only a slight amount of power. However, if for some reason you are not using the recorder for a long period of time, it is advisable to remove the power cord from the AC outlet.
- Since the moisture condensation prevention circuit cannot evaporate existing moisture condensation immediately after the power cord has been plugged into the AC outlet, you must allow for a few hours if the recorder is to be used in such areas as would occasion moisture condensation.

Operation
- When a cassette is loaded, the power is switched on automatically.
- The cassette can be unloaded even when the power is off. Pressing the EJECT button turns the power on and, after ejection of the cassette, shuts it off automatically in this case.
- As long as the TIMER button is in the ON position, the OPERATE and EJECT buttons have no effect and loading or unloading of a cassette is not possible. Do not force a cassette into the slot in this situation.

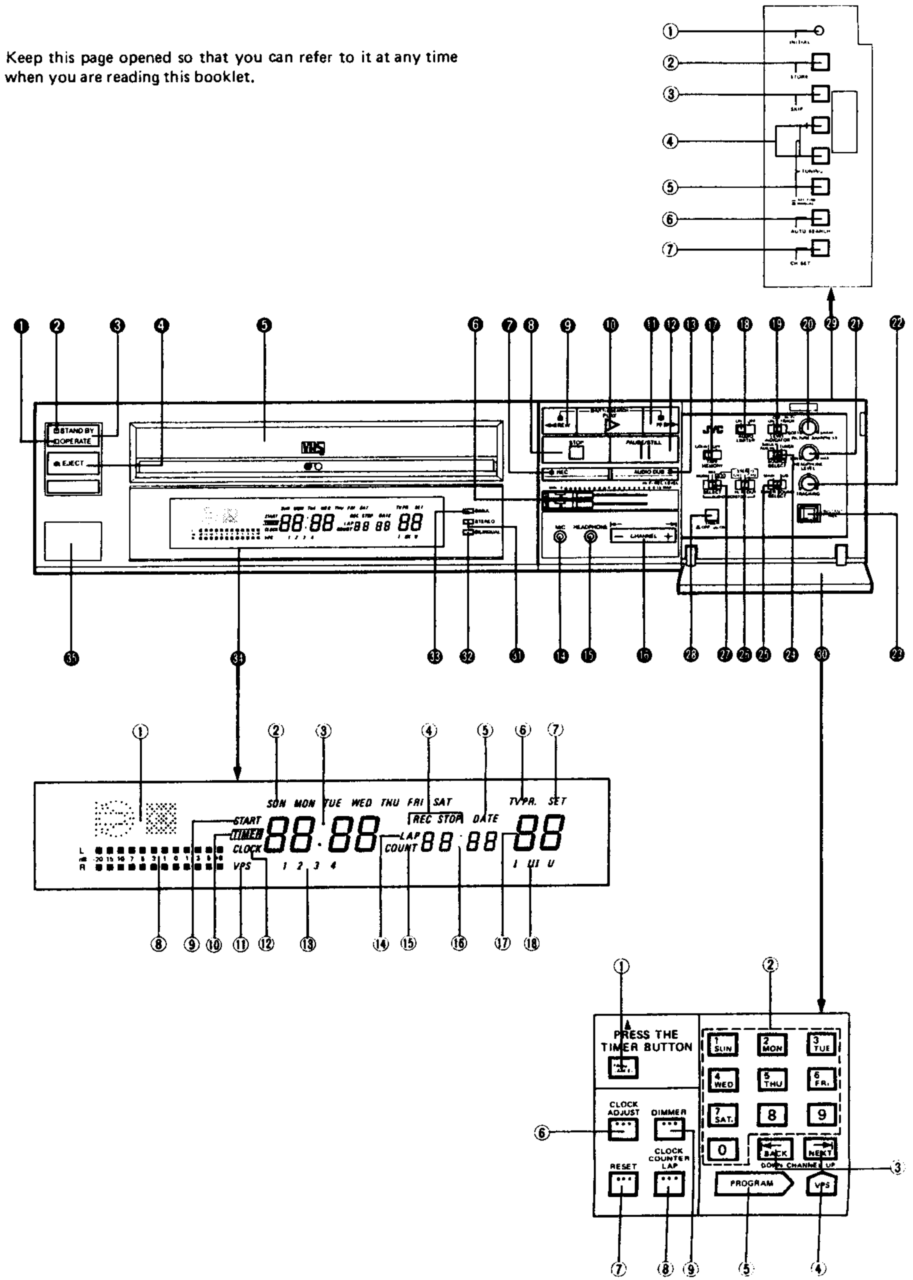
Remote control unit
- Avoid violent shocks, especially take care not to drop the unit.
- Take care not to allow liquid to spill into the unit.
- Do not place heavy objects on the unit.
- Avoid leaving the unit in places subject to direct sunlight or extremely high temperatures.

WARNING
1. This recorder can also receive colour television signals in East Germany (DDR) for recording and playback.
2. Recordings made of DDR television signals produce monochrome pictures if played back on another video recorder of PAL or SECAM standard.
3. SECAM prerecorded cassettes or recordings made with a SECAM video recorder produce monochrome pictures when played back with this recorder.
4. This recorder cannot be used in France. Use a SECAM recorder to record French SECAM signals.

IMPORTANT: It is permissible to record television programmes only in the event that third party copyrights and other rights are not violated.

CONTROLS, INDICATORS AND CONNECTORS

Keep this page opened so that you can refer to it at any time when you are reading this booklet.



❶ OPERATE indicator

A red LED which shows that the operating power is ON.

❷ STAND BY indicator

A green LED which shows that the power cord is plugged in an AC outlet. Goes out when the OPERATE button is pressed.

❸ OPERATE button

Press to apply operating power to the HR-D565E for recording or playback. The red indicator will light and the green one will go out. Loading a cassette also turns the power on.

❹ Cassette EJECT button

❺ Cassette loading slot

Insert a VHS video cassette. The door will close and the indicator showing that a cassette is inside will appear.

❻ Hi-Fi audio recording level controls (Hi-Fi REC LEVEL)

The recording level of hi-fi audio signals can be manually adjusted when the AUDIO LIMITER switch ⓲ is in the OFF position. For adjustment, slide these controls referring to the audio level indicators ⑧ of ㉞ ; the upper for left channel and the lower for right channel. When the squares up to 0 dB light with the loudest signal being applied, the recording level is optimum.

❼ REC button

Press together with the PLAY button ❿ for video and audio recording.

❽ STOP button

To stop the tape.

❾ REW/SHUTTLE SEARCH button

To rewind the tape, press this button while in the Stop mode. To view the speeded-up picture in the reverse direction for programme search, hold this button pressed while in the Play mode.

❿ PLAY button

Press to play back the tape or cancel the Pause/Still mode. Also press this button together with the REC button ❼ for recording or with the AUDIO DUB button ⓭ for audio dubbing.

⓫ FF/SHUTTLE SEARCH button

To fast forward the tape, press this button while in the Stop mode. To view the speeded-up picture in the forward direction for programme search, hold this button pressed while in the Play mode.

⓬ PAUSE/STILL button

Press to stop the tape temporarily to avoid recording of unwanted material or to view a still picture. The still picture can be advanced each time this button is pressed. Keeping this button pressed advances the picture continuously to give a slow-motion effect.

⓭ AUDIO DUB button

Press this button together with the PLAY button ❿ for audio dubbing. Audio dubbing is possible only on the longitudinal audio track. (Hi-Fi soundtrack cannot be altered.) (See page 28.)

⓮ MIC jack

Connect a microphone for audio dubbing.

⓯ Headphone jack (HEADPHONE)

Connect a set of headphones for monitoring or private listening.

⓰ CHANNEL -/+ button (⇤ ⇥)

Press and hold the "+" or "-" side to quickly review channels which are higher or lower than the currently tuned channel. Release the -/+ button when the desired channel number appears on the FDP (fluorescent display panel).

This button can also be used as a cursor key in the clock and timer setting modes, exactly the same way as the BACK and NEXT keys on the flip-down control panel.

⓱ TAPE MEMORY switch

When the switch is set to COUNT, the tape stops automatically at the counter reading of nearly "0000" during fast forward and rewind. Normally set this switch to OFF.

⓲ AUDIO LIMITER switch

ON: hi-fi audio recording level is automatically adjusted to prevent over-level recordings.

OFF: hi-fi audio recording level can be manually adjusted with the Hi-Fi REC LEVEL slide controls ❻ .

- Playback level has no relation to the Hi-Fi REC LEVEL controls.
- The recording level of normal audio signals is always adjusted automatically regardless of the setting of the AUDIO LIMITER switch.

⓳ LEVEL INDICATOR switch

Selects the function of the audio level/hi-fi tracking meter ⑧ of ㉞ .

OFF: to turn the meter off.

ON: to obtain the indication of audio level.

Hi-Fi TRACK: to use the meter for hi-fi tracking adjustment.

⓴ PICTURE SHARPNESS control

Turn this knob clockwise to make the picture sharper. Turn counterclockwise to give the picture a softer tone. Effective only for playback pictures. (No effect for recording.)

㉑ HEADPHONE LEVEL control

Adjusts the level of audio output from the HEADPHONE jack ⓯ .

㉒ TRACKING control

Use this control to eliminate noise bars, if observed during playback.

Hi-fi audio tracking can also be optimised using this control. When noise or breaks are sensed in the reproduced hi-fi sound, perform tracking adjustment. For this purpose, set the LEVEL INDICATOR switch ⓳ to Hi-Fi TRACK and turn this control so that the greatest number of squares of the right-channel audio level indicator light. (Only the right-channel indicator lights in this case.)

㉓ INSTANT REC button

Use this button to start recording instantly and stop automatically after a predetermined time. (See page 26.)

㉔ SOURCE SELECT switch

For selecting the recording input signal.

TUNER: To record signals coming from the built-in tuner.

AUX: To record signals coming from a unit connected to the rear panel AUDIO/VIDEO socket.

SIMUL: To record the video signal and normal audio signal from the built-in tuner and the hi-fi audio signal from the rear panel AUDIO IN connectors. When recording FM simulcast TV programmes, use this position.

㉕ TUNER SOUND SELECT switch

Selects the desired soundtrack to be recorded on the normal audio track when recording bilingual TV programmes. Both soundtracks will be recorded on the hi-fi audio track with the main one on channel 1 and the sub soundtrack on channel 2.

Note: Stereo programmes are recorded in stereo on the hi-fi audio track and in mono (mixed L + R) on the normal audio track regardless of the setting of this switch.

MAIN: to record the main soundtrack (local language).

SUB: to record the sub soundtrack (foreign language).

㉖ AUDIO MONITOR Hi-Fi OUT switch

Selects the hi-fi audio channel(s) to be listened to.

CH1: to listen to the sound of the left channel.

STEREO: to listen to the sound from hi-fi stereo tapes. (The audio output from the RF OUT terminal is monaural. Therefore, if only the RF OUT connection is made, the mixed sound of both channels is heard when this switch is set to STEREO.)

CH2: to listen to the sound of the right channel.

㉗ AUDIO MONITOR SELECT switch

Selects the audio track(s) to be listened to.

This switch is effective for all audio outputs (RF OUT, HEADPHONE and AUDIO OUT).

NORM: to listen to the sound on the normal audio track.

MIX: to listen to the mixed sound of hi-fi and normal audio tracks (for example, to enjoy hi-fi audio while at the same time listening to a narration dubbed onto the normal audio track).

Hi-Fi: to listen to the sound on the hi-fi audio track.

㉘ TIMER button

Press to ON after you have preset the timer for unattended recording.

㉙ Built-in tuner pre-tuning section

Open the compartment cover on top of the unit.

① Display initialization button (INITIAL)

Inside the hole is a small button. Press it with a pointed object to initialize the memory for the FDP display, when required. Normally do not touch this button.

② STORE button

To store the tuned-in station in memory.

③ SKIP button

To skip unused channels.

④ Fine/Manual tuning buttons (-, +)

The function of these buttons differs depending on the setting of the TUNING button ⑤.

AFC FINE: To shift the AFC centre frequency for fine tuning; press "-" button to shift it in the direction of decreasing frequencies, and "+" in the direction of increasing frequencies.

MANUAL: To tune to weaker broadcast signals manually; press "-" button to search for channels of lower frequencies, and "+" for those of higher frequencies. Sweep tuning is performed only while the button is being pressed.

⑤ TUNING button

AFC FINE (▬): To activate the built-in Automatic Frequency Control circuit. Also, in the AFC FINE position, the above two controls function as fine tuning controls.

MANUAL (▄): To use the same two controls as manual tuning controls.

⑥ Automatic tuning button (AUTO SEARCH)

Press this button to initiate automatic sweep tuning, which stops automatically when a broadcast signal is detected.

⑦ Channel set button (CH SET)

Press this button for pre-tuning the built-in tuner to TV stations in your area. (See pages 15 and 16.)

㉚ Flip-down control panel

① PROG. CANCEL button

Press this button to cancel or "clear" the programmed data.

② Multi-purpose numeric keys

These 10 keys can be used to set the date, time and channel in the Timer Set mode, and the day, date and time in the Clock Set mode. (Can also be used for random-access channel selection.)

"1" also functions as Sunday button (SUN).
"2" also functions as Monday button (MON).
"3" also functions as Tuesday button (TUE).
"4" also functions as Wednesday button (WED).
"5" also functions as Thursday button (THU).
"6" also functions as Friday button (FRI).
"7" also functions as Saturday button (SAT).

For channel selection (in all modes), the "0" key functions as follows: Pressing once gives channel 10, twice, channel 20 and three times, channel 30. The zero in the units place blinks. If any other numeric key is pressed while the zero is blinking, channels 11 – 19, 21 – 29 and 31, 32 are obtained. (Numbers larger than 32 will be rejected.) To obtain channels 10, 20 and 30, allow for about 4 seconds after pressing the "0" button; blinking of the zero in the units place will stop and the corresponding channel will be set.

③ Cursor keys (BACK, NEXT, CHANNEL UP/DOWN)

The BACK key moves the cursor (flashing position) back, and the NEXT key advances the cursor. Use these keys to reach preprogrammed positions for correction. Also usable for channel up/down scanning.

④ VPS button

Allows for VPS recording when pressed in the Timer Set mode; the VPS indicator will light in the FDP.

⑤ PROGRAM button

Press this button when you want to preset the timer for unattended recording. The entire display will change to the Timer Set mode, with P:1 illuminated at the clock time display section. This shows that programme memory No. 1 is ready to accept entries. To change the programme number, press this button until the number of the programme memory you want to use illuminates. After programme number 4, the display returns to the Clock mode.

⑥ CLOCK ADJUST button

Press this button for clock setting.

⑦ RESET button

Press to reset the tape counter reading to "0000".

⑧ CLOCK/COUNTER/LAP button

Press to switch the middle 4-digit display from tape counter to elapsed recording time display, or vice versa. Can also be used to change the entire display from the Timer Set mode to the Clock mode. (See page 18.)

⑨ DIMMER button

The brightness of the display can be subdued by pressing this button.

㉛ STEREO indicator

Lights when a stereo programme is being received.

㉜ BILINGUAL indicator

Lights when a bilingual programme is being received.

㉝ SIMUL indicator

Lights when the SOURCE SELECT switch ㉔ is set to SIMUL.

㉞ Fluorescent display section

①Symbolic mode indicator

Illuminates to give quick, easy visual reference of the operating mode. Combinations of 6 different symbols indicate 10 operating modes:

PLAY:	▷	AUDIO DUB PAUSE:	○‖
STILL:	‖	REWIND:	≪
RECORD:	○	FAST FORWARD:	≫
RECORD PAUSE:	○‖	REVERSE SHUTTLE SEARCH:	▷≪
AUDIO DUB:	○	FORWARD SHUTTLE SEARCH:	▷≫

②Day indicator

Illuminates for continuous day indication.

③Clock/Start time/Programme No. display

④REC STOP indicator

Flashes or illuminates in the Instant Recording mode. Only STOP illuminates for timer record stop time setting.

⑤DATE indicator

Illuminates to show that the digits below are the date.

⑥TV PR. indicator

Illuminates to show that the displayed channel is currently being received by the built-in tuner.

⑦SET indicator

Illuminates when the CH SET button (⑦ of ㉘) in the top-panel pre-tuning section is pressed for pre-tuning and flashes during sweep scanning.

⑧Audio level/Hi-Fi tracking indicators

These indicators, one for left channel and one for right channel, show the recording level of hi-fi audio signals during recording. During playback, these show the playback level of audio signals.

The right-channel indicator also functions as a hi-fi tracking meter, depending on the setting of the LEVEL INDICATOR switch ⓳. (See page 12.)

⑨START indicator

Illuminates for switch-on time setting.

⑩TIMER indicator

Illuminates when the TIMER button ㉘ is pressed to ON, to show that the recorder has been properly preset for timer recording.

⑪VPS indicator

Lights when the VPS button (④ of ㉚) is pressed in the Timer Set mode to show that VPS recording has been reserved.

⑫CLOCK indicator

Always illuminates except in the Timer Set mode.

⑬Programme number indicator

Numerals 1 through 4 illuminate successively each time the PROGRAM button (⑤ of ㉚) is pressed to show which programme is ready for entry.

⑭LAP indicator

Illuminates to show that the digits in the display to the right are the reading for the elapsed recording time.

⑮COUNT indicator

Illuminates to show that the digits in the display to the right are the counter reading.

⑯Date/Stop time/Elapsed time/Tape counter display

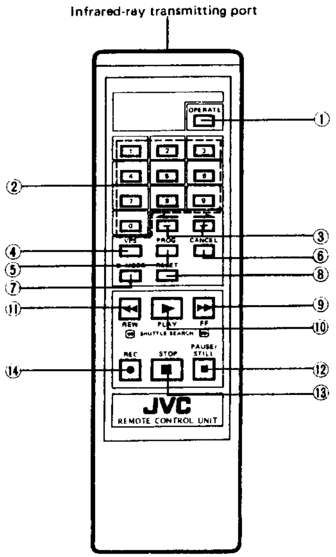
⑰Channel display

Numerals 1 through 32 are successively displayed to show which channel is selected for recording, timer setting or for pre-tuning.

⑱Band indicator

㉟ Infrared beam receiving window

Infrared remote control unit



① OPERATE button

To switch power on or off for the recorder.

② Numeric keys

These 10 keys can be used for channel selection and timer programming in the same way as those on the recorder.

③ Channel scan and cursor keys

These function in the same way as the CHANNEL –/+ button ⓰ or the BACK and NEXT (CHANNEL DOWN and UP) keys ③ of ㉚.

④ VPS button

Press to engage the VPS mode after setting the timer. Functions in the same way as the VPS button ④ of ㉚ .

⑤ PROG. button

Use to programme the timer from a distance. Functions in the same way as the PROGRAM button ⑤ of ㉚.

⑥ CANCEL button

Functions in the same way as the PROG. CANCEL button ① of ㉚ .

⑦ Display mode select button (D. MODE)

Functions in the same way as the CLOCK/COUNTER/LAP button ⑧ of ㉚.

⑧ RESET button

Functions in the same way as the RESET button ⑦ of ㉚ .

⑨ FF/SHUTTLE SEARCH button

⑩ PLAY button

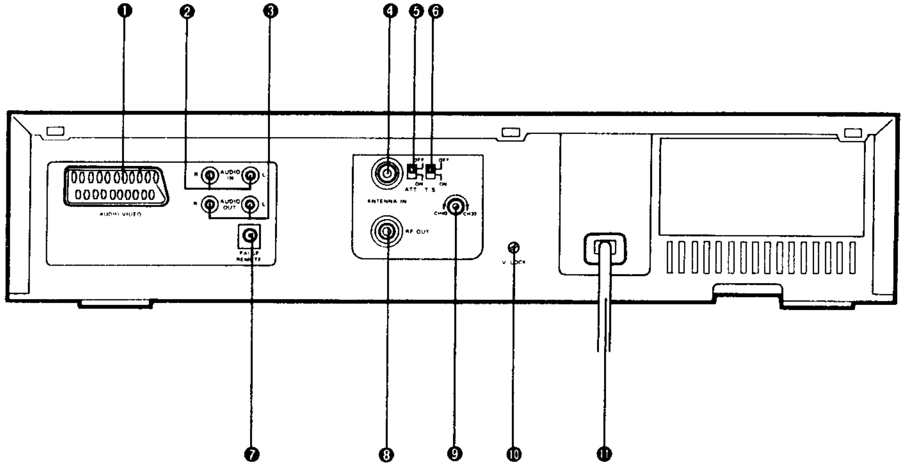
⑪ REW/SHUTTLE SEARCH button

⑫ PAUSE/STILL button

⑬ STOP button

⑭ REC button

Rear panel



❶ AUDIO/VIDEO socket

A 21-pin standardised audio/video input/output socket for the connection to a stereo TV equipped with the same type of socket. The audio output can be selected with the AUDIO MONITOR SELECT switch.

❷ AUDIO IN connectors

Connect an audio tape recorder or other audio sources for recording sound.

❸ AUDIO OUT connectors

Both hi-fi and normal audio signals can be obtained from these connectors. The output can be selected with the AUDIO MONITOR SELECT switch.

❹ ANTENNA IN connector

Connect an aerial to this connector.

❺ Attenuator switch (ATT.)

Set to OFF to receive broadcasts from distant stations. Set to ON to receive broadcasts of high field strength. Use a screwdriver for setting this switch.

❻ Test signal switch (T.S.)

Set to ON when tuning your TV receiver for the video channel. A test signal in the form of two vertical white bars will be available.

❼ PAUSE REMOTE terminal

When using a JVC video camera, connect the remote control cable of the camera adapter to this terminal for the purpose of controlling the starting and stopping of the tape with the camera's start/stop switch.

❽ RF OUT connector

Connect to the aerial connector of a TV receiver through the aerial cable (provided).

❾ RF converter frequency adjustment screw

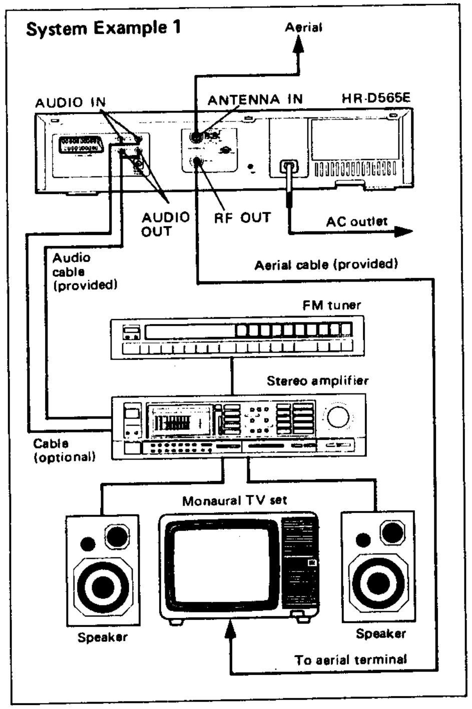
See page 10.

❿ V. LOCK adjustment screw

When operating in the Still mode, adjust this screw to eliminate any vertical vibration of the picture, by using a screwdriver.

⓫ Power cord

CONNECTIONS

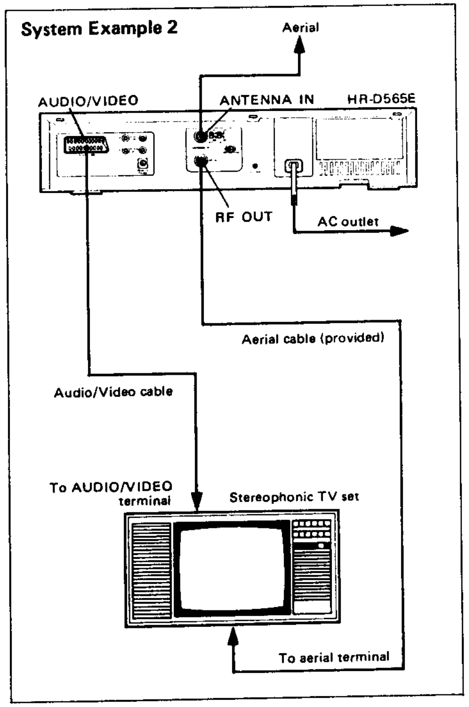


Procedure

1. Remove the aerial cable from the TV receiver and reconnect to the HR-D565E.
2. Connect the HR-D565E to the TV receiver using the aerial cable (provided).
3. Connect the AUDIO IN L and R connectors of the HR-D565E to the recording output terminals of the amplifier. (Exactly as one hooks up an audio cassette deck.)
4. Connect the AUDIO OUT connectors of the HR-D565E to the AUX IN terminals of the amplifier.

Notes:

- Observe L and R when connecting the audio input and output connectors of the HR-D565E to a stereo amplifier.
- If stereo or bilingual TV broadcasts are receivable in your area, this recorder can record them independently of the TV set and play them back through the connected audio system.
- When listening to sound from the connected stereo system, turn down completely the sound volume of the TV receiver.
- Listening to stereophonic sound is also possible using stereo headphones connected to the front panel HEADPHONE jack.
- With this setup, you can enjoy prerecorded stereo video tapes in stereo (or hi-fi stereo if they are Hi-Fi VHS tapes) while viewing them on a regular TV receiver, and also you can record FM simulcast television programmes with hi-fi audio accompaniment. See page 21.



CAUTION

- The HR-D565E has a dynamic range of more than 80 dB with regards to its hi-fi audio capability. It is recommended that you check the maximum level if you are going to listen to the hi-fi audio signals through a stereo amplifier. A sudden surge in speaker input may cause speaker damage.
- Some speakers and televisions are specially shielded to prevent television interference. If both are of the non-shielded type, do not place the speakers adjacent to the TV set, otherwise the video playback picture will not be normal because of mutual interference.

For customers who own a stereo TV equipped with a standardised audio/video socket

By connecting the 21-pin AUDIO/VIDEO socket of the HR-D565E to your TV's audio/video socket, it is possible to play stereo tapes through the TV's speakers. In this case, use the A/V mode specified on your TV, instead of UHF channel 36.

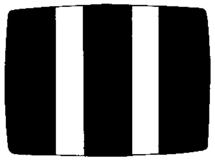
VIDEO CHANNEL SETTING

ATTENTION
This adjustment is necessary to pre-tune the built-in tuner (see page 15). To view video programmes through the RF OUT terminal, you must set the TV's channel selector to the output channel of the RF converter. To view video programmes through the AUDIO/VIDEO socket, use the A/V mode specified on your TV.

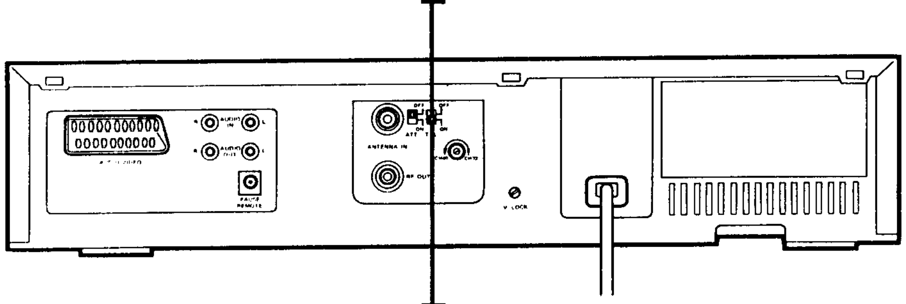
The signal from the RF converter is viewed through a vacant channel not used for broadcasting. The converter channel of all units is set to UHF channel 36 prior to shipment. Setting your TV receiver to UHF channel 36 may provide video playback. However, to obtain the best possible reproduction on your TV receiver, accurate adjustment to the RF converter output is required.

Procedure

1 Turn on the recorder by pressing the front panel OPERATE button. Turn on the TV receiver.



3 Adjust your TV receiver in the vicinity of UHF channel 36 until you bring in the two white signal bars on the screen as illustrated. This setting is now the VIDEO CHANNEL of the TV receiver to which the HR-D565E is connected.

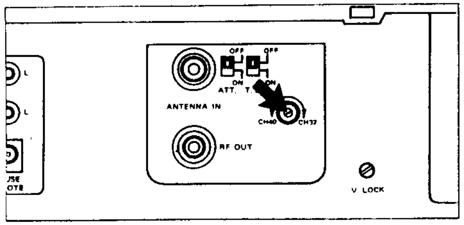


2 Set the T.S. switch to ON.

4 Reset the T.S. switch to OFF.

Notes:

- When you adjust your TV receiver to channel 36 for video playback, if some interference noise is seen on the screen because of broadcasts on neighbouring channels or if your preset broadcasts should be affected in picture quality, it is necessary to shift the RF converter output frequency from that of channel 36.



For this purpose, insert a screwdriver into a hole provided on the rear of the set and re-adjust the RF converter frequency adjustment screw in minute steps. Then tune the TV receiver once again until a clear picture is obtained.
This adjustment requires extreme precision and must be done with the utmost care. We recommend that you consult your JVC dealer for making this adjustment.

- No signal is available from the AUDIO/VIDEO socket while the test signal is being used.
- If a prerecorded VHS cassette is available, TV adjustment for VIDEO CHANNEL setting is also possible using it to obtain a playback picture. Insert the cassette and operate the HR-D565E for playing back the cassette. Then tune the TV receiver to obtain clear pictures and sound while monitoring the playback picture on the TV screen.
- If your TV receiver is not provided with an AFC circuit, perform fine tuning of the TV receiver when you are actually viewing video cassettes.

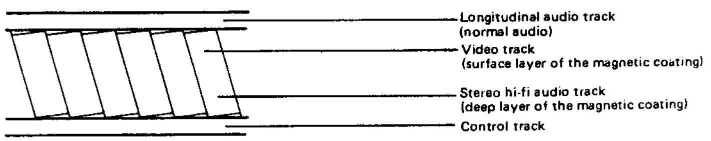
INFORMATION ON THE HR-D565E'S AUDIO SYSTEM

Hi-Fi and normal audio

To provide true hi-fi audio accompaniment to video entertainment and, at the same time, compatibility with regular VHS tapes, the HR-D565E employs a newly-developed audio recording system. Hi-fi audio signals (2-channel) are recorded deep into the tape's magnetic coating, and the video signal is recorded on top of the audio signals in a shallower layer. At the same time, another audio head records normal audio signals (monaural) onto the usual longitudinal audio track. Since this longitudinal audio track is exactly the same as on regular VHS tapes, tapes recorded on the HR-D565E can be played back on other VHS machines, and vice versa. Also, this longitudinal track can be replaced later with new recordings through audio dubbing.

CAUTION:
The hi-fi soundtrack recorded with the HR-D565E cannot be reproduced with video equipment other than Hi-Fi VHS.

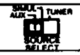
Tape pattern recorded with the HR-D565E



Hi-fi audio recording and reproduction are available only from the hi-fi audio track while the longitudinal audio track provides normal audio.

The hi-fi and normal soundtracks are recorded simultaneously, and audio dubbing is applicable only to the normal audio.

Recording options according to the setting of the SOURCE SELECT switch

Track / SOURCE SELECT switch position		Video track	Normal audio track (mono)	Hi-fi audio track (2-channel)
TUNER		TV picture (from built-in tuner)	TV sound (from built-in tuner) (Mixing with microphone input is possible.)	
SIMUL		TV picture (from built-in tuner)	TV sound (from built-in tuner)	Audio signal from AUDIO IN (Mixing with microphone input is possible.)
AUX		Video signal from AUDIO/VIDEO	Audio signal from AUDIO/VIDEO (Mixing with microphone input is possible.)	

Notes:

- Microphone input will always be mixed with the audio signals on the hi-fi or normal audio track. Only when the SOURCE SELECT switch is in the SIMUL position, the normal audio track is not affected by the microphone input. Therefore, do not leave a microphone connected to the MIC jack unless needed.
- You can record audio only (without recording any video signal) on the normal and hi-fi audio tracks. This means you can record a continuous 4-hour FM programme onto a single cassette (E-240). For this purpose, set the SOURCE SELECT switch to SIMUL and connect an audio source, such as an FM tuner, to the AUDIO IN connectors. And tune the built-in tuner to a vacant channel.

Recording options according to the type of broadcasts and the setting of the TUNER SOUND SELECT switch

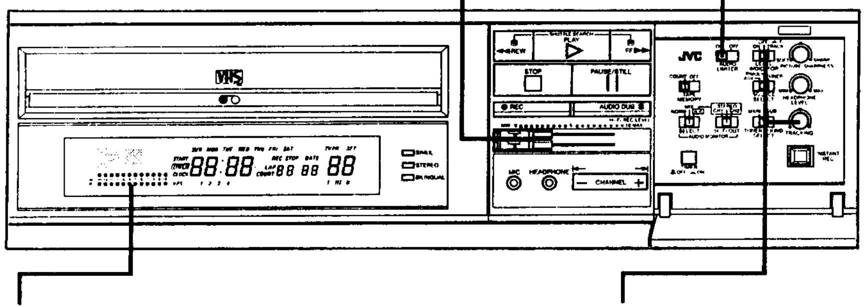
Type of broadcast	Audio Track / TUNER SOUND SELECT switch position	Normal audio track (mono)	Hi-fi audio track (2-channel)	
			L	R
Regular (monaural audio)	Either position	Mono	Mono	Mono
Stereo broadcast	Either position	L + R mixed	Stereo	
Bilingual broadcast	MAIN	Main soundtrack (local language)	Main soundtrack (local language)	Sub soundtrack (foreign language)
	SUB	Sub soundtrack (foreign language)		

Hi-Fi audio recording level adjustment

While recording onto the normal audio track is controlled by the built-in Automatic Level Control circuit, hi-fi audio recording has two control options: manual and automatic.

Hi-Fi REC LEVEL controls
Slide these controls, the upper for left channel and the lower for right channel, for manual adjustment of the hi-fi audio recording level.

AUDIO LIMITER switch
Setting this switch to ON activates the built-in audio limiter circuit for both channels so that the recording level is automatically controlled. For manual adjustment, set this switch to OFF. (The recording level for normal audio is always controlled automatically regardless of the setting of this switch.)



Audio level indicators
For manual control of the recording level, first set the relevant switches as follows:
AUDIO LIMITER → OFF
LEVEL INDICATOR → ON
AUDIO MONITOR SELECT → Hi-Fi

Then slide the Hi-Fi REC LEVEL controls referring to these indicators. When indicators up to or near 0 dB light for the loudest signal being applied, the recording level is optimum. (The level at which only one red indicator lights from time to time may be most appropriate.)

During playback, these indicators show the level of audio signals recorded on the tape.

These indicators do not light when the LEVEL INDICATOR switch is in the OFF position.

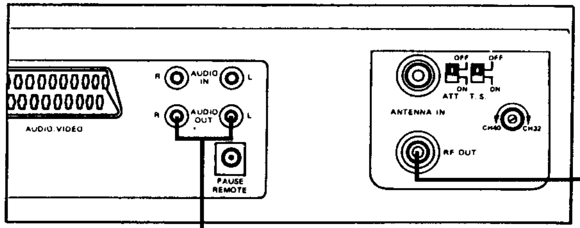
Notes:

- With the AUDIO MONITOR SELECT switch in the MIX or NORM position, the recording level of hi-fi audio signals cannot be correctly indicated. Select the Hi-Fi position when adjusting the recording level.
- The normal audio signal level is also displayed by these indicators, but cannot be adjusted.

LEVEL INDICATOR switch
The right-channel audio level indicator also functions as a tracking meter during playback. If noise or breaks are sensed in the reproduced sound from the hi-fi audio track or noise bars are visible on the screen, attempt to correct using the TRACKING control while referring to the meter. For this purpose, set this switch to Hi-Fi TRACK and turn the TRACKING control so that the greatest number of squares of the right-channel indicator light.
When this switch is set to OFF, the indicators do not light, regardless of whether during recording or playback.

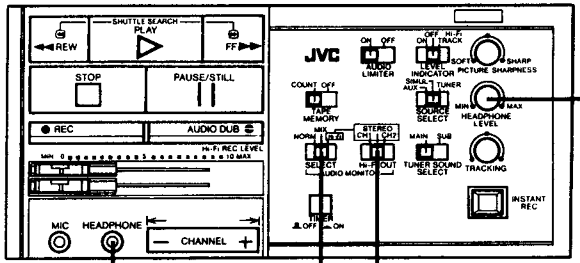
Dual-audio playback flexibility

Two different types of audio tracks (hi-fi and normal) allow a variety of playback options depending on the connection and the settings of relevant controls and switches.


AUDIO IN
AUDIO OUT
AUDIO VIDEO
PAUSE REMOTE
ANTENNA IN
RF OUT
ATT
T.S
CH40
CH32

RF OUT connector
Delivers audio (both hi-fi and normal) and video signals to a TV receiver. When the recorder is not used, the aerial signal is supplied from this connector to the TV receiver to allow regular TV viewing; when a video tape is played back through the RF OUT connector, the audio is reproduced always as monaural; with hi-fi stereo tapes, both channels are mixed or the one selected by the AUDIO MONITOR Hi-Fi OUT switch is reproduced. Therefore, for stereo playback, connect a stereo system to the AUDIO OUT connectors.

AUDIO OUT connectors
Delivers the audio signals from both hi-fi and normal audio tracks.


SHUTTLE SEARCH
PLAY
REW
FF
STOP
PAUSE/STILL
REC
AUDIO DUB
Hi-Fi REC LEVEL
MIC
HEADPHONE
CHANNEL
JVC
COUNT OFF
TAPE MEMORY
AUDIO LIMITER
LEVEL INDICATOR
PICTURE SHARPNESS
SOFT
SHARP
SIMUL
TUNER
AUX
SOURCE SELECT
HEADPHONE LEVEL
MIN
MAX
NORM
MIX
Hi-Fi
STEREO
CH1
CH2
MAIN
SUB
TUNER SOUND SELECT
TRACKING
INSTANT REC
TIMER
OFF
ON

HEADPHONE LEVEL control

HEADPHONE jack
Delivers the audio signals from both hi-fi and normal audio tracks. The headphone output level is adjustable with the HEADPHONE LEVEL control.

AUDIO MONITOR SELECT switch
Selects hi-fi audio, normal audio or a mixture of the two.

- Set to Hi-Fi to listen to hi-fi audio.
- Set to MIX to listen to both audio tracks.
- Set to NORM to listen to normal audio.

Notes:

- This switch functions during recording as well, although it has no effect on the recorded signal.
- When playing back a tape containing the same soundtrack on both hi-fi and normal audio tracks, a slight time lag is sensed between the two soundtracks, probably with some distortion, in the MIX position. Therefore, in such a case, use the Hi-Fi or NORM position.

AUDIO MONITOR Hi-Fi OUT switch
Selects the channel (left, right or both) for listening. Use this switch when playing back hi-fi stereo tapes or tapes containing independent soundtracks on two hi-fi channels.

- Set to CH1 to listen to the left channel sound.
- Set to STEREO to listen to a stereo soundtrack.
- Set to CH2 to listen to the right channel sound.

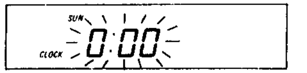
Note:

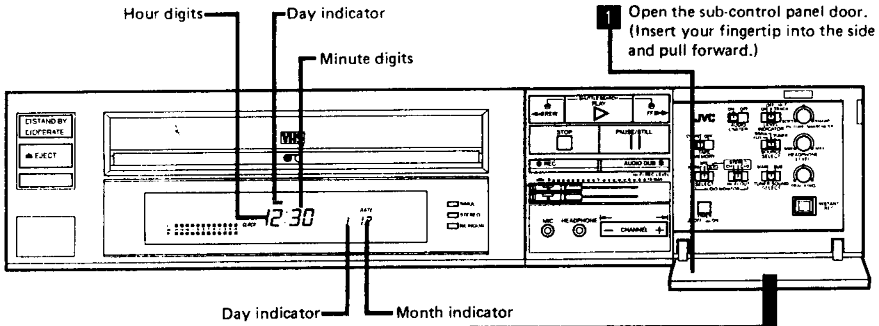
- This switch functions during recording as well, although it has no effect on the recorded signal.

CLOCK SETTING

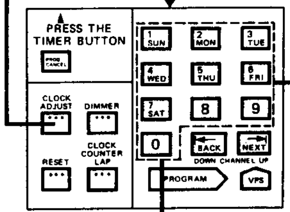
Plug the HR-D565E into an AC outlet. The display shows a flashing 0:00 with SUN and CLOCK illuminated. This initial display also functions as a power failure indicator.

Power failure indicator

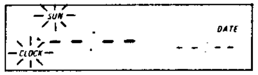

SUN
CLOCK
0:00


Hour digits
Day indicator
Minute digits
Day indicator
Month indicator
STANDBY
EJECT
12:30
DATE
12
JVC

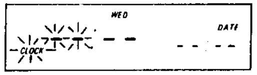
1 Open the sub-control panel door. (Insert your fingertip into the side slot and pull forward.)


PRESS THE TIMER BUTTON
PROG CANCEL
CLOCK ADJUST
DIMMER
CLOCK COUNTER LAP
RESET
1 SUN
2 MON
3 TUE
4 WED
5 THU
6 FRI
7 SAT
8
9
0
BACK
NEXT
DOWN CHANNEL UP
PROGRAM
VPS

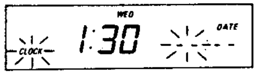
2 Press CLOCK ADJUST.
The display will change to the Clock Set mode with "SUN" and "CLOCK" flashing.


SUN
CLOCK
DATE

3 Press one of the numeric keys "1 (SUN)" to "7 (SAT)" that corresponds to the day of setting. The hour digits will start flashing.


WED
CLOCK
DATE

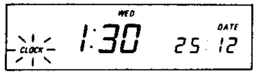
4 Set the hour and minute in that order.


WED
CLOCK
1:30
DATE

- The flashing position is ready for entry.
- To set a one-digit number, first press "0", then press the numeric key for 1 to 9.
- Zero will not be displayed in the tens place of the hour indication unless the cursor is moved back to the hour digits.
- For a two-digit number, simply press the corresponding numeric keys in the right order.
- In hour setting, numbers larger than 23 will be rejected.
- In minute setting, numbers larger than 59 will be rejected.

5 Set the day and month in that order.

- The flashing position is ready for entry.
- The setting method is the same as for time setting.
- In day setting, invalid numbers such as 32 of January or 30 of February will be rejected.
- In month setting, numbers larger than 12 will be rejected.


WED
CLOCK
1:30
DATE
25 12

6 Press CLOCK ADJUST.

- Press it at the exact instant of the time signal, and the clock will be set accurately to the present time.

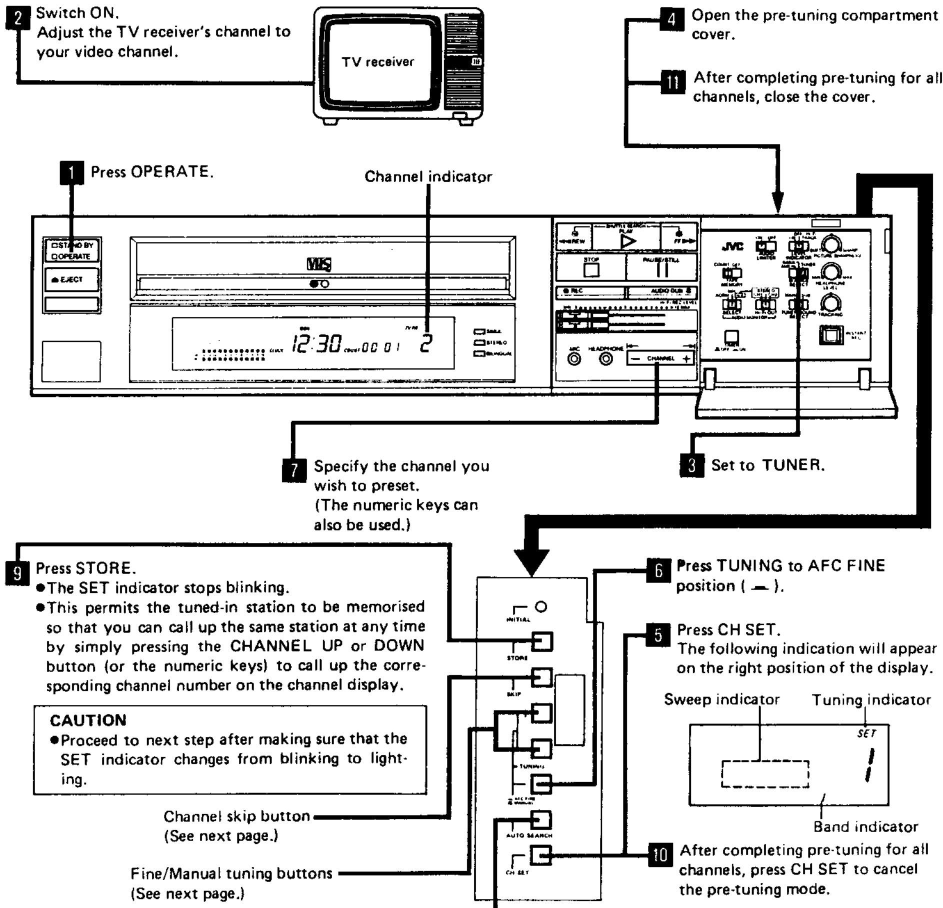
Notes:

- If you press a wrong numeric key, you can return to the previous position using the reverse cursor key BACK.
- Once all necessary data have been entered, you can reach any position for correction using the reverse and forward cursor keys BACK NEXT.
- Clock setting is not possible if the TIMER button is in the ON position. First check to see that it is in the OFF position.
- Readjust the date in leap years.

Clock/timer memory backup

- The built-in memory backup battery allows for correct time-keeping for about one year after the recorder is unplugged from the AC outlet. During this one-year period of power outage, the preprogrammed timer data are also maintained, although the display blacks out.
- The memory backup battery is being recharged when the recorder is not in use. For the fully-depleted battery to be recharged sufficiently for a one-year backup, it takes about 3 days.
- When the backup time is expired, the power failure indicator shown above will appear when power is reapplied.

PRE-TUNING THE BUILT-IN TUNER



1 Press OPERATE.

2 Switch ON.
Adjust the TV receiver's channel to your video channel.

3 Set to TUNER.

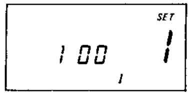
4 Open the pre-tuning compartment cover.

5 Press CH SET.
The following indication will appear on the right position of the display.

6 Press TUNING to AFC FINE position (▬).

7 Specify the channel you wish to preset.
(The numeric keys can also be used.)

8 Press AUTO SEARCH.
- Pressing this button initiates automatic scanning in the sequence of band I, III and U.
- "SET" and the band indicator (I, III or U) will blink as the auto-scanning process proceeds.
- The last 3 digits of the tape counter functions as a sweep indicator, changing from 00 to 100 for each band, to give a rough reference of where in each band tuning is being performed.



- Available channels in each band are as follows:

  VHF band I (47 – 111 MHz):
  - CH. E2 – E4 (Common European channels)
  - CH. S1 – S3, M1 (Belgium)
  - CH. X, Y, Z, S1 (Switzerland)
  - CH. S21 – S23, S1 (West Germany)

  VHF band III (111 – 300 MHz):
  - CH. E5 – E12 (Common European channels)
  - CH. M2 – M10, U1 – U10 (Belgium)
  - CH. S2 – S10, S11 – S20 (West Germany, Switzerland)

  UHF band IV/V (470 – 862 MHz):
  - CH. E21 – E69 (Common European channels)
- When any broadcast signal is detected, sweeping will automatically stop.

9 Press STORE.
- The SET indicator stops blinking.
- This permits the tuned-in station to be memorised so that you can call up the same station at any time by simply pressing the CHANNEL UP or DOWN button (or the numeric keys) to call up the corresponding channel number on the channel display.

CAUTION
- Proceed to next step after making sure that the SET indicator changes from blinking to lighting.

10 After completing pre-tuning for all channels, press CH SET to cancel the pre-tuning mode.

11 After completing pre-tuning for all channels, close the cover.

IMPORTANT INFORMATION ON PRE-TUNING

Additional information on the tuning procedure

- If no command is given for about 60 seconds after the CH SET button has been pressed, the channel display will return to the original with the TV PR. indicator illuminated.
- When specifying the channel you wish to preset, the CHANNEL button can be pressed either repeatedly for changing the number in a single increment or continuously held for rapid automatic changing.
- When sweeping stops in step 8, check to see if the received broadcast is your desired one or not.
- After tuning in step 8, be sure to press the STORE button, otherwise the tuned-in condition will be lost.
- After step 8, change the channel number and repeat steps, 8 and 9 to preset all necessary channels.

Fine tuning

- When the TUNING button is in the AFC FINE position, the AFC circuit is in operation. Normally leave this button in the AFC FINE position. If, however, the picture quality is unsatisfactory due to ghosts or other noise, perform fine tuning after step 8.
- For this purpose, press either the - or + button so that the picture clears up. Each time either button is pressed, the picture condition changes in a single increment (continuous changing is not possible); 8 increments with the "-" button and 7 increments with the "+" button.
- If the picture is not clear after all procedures, perform fine tuning on your television.
- Distorted pictures or sound will be recorded if fine tuning has not been properly performed. Exercise care with this adjustment since the recorded picture and sound cannot be adjusted later.

Manual tuning

- With automatic tuning, only those stations which have a signal strength exceeding a certain level can be captured.
- To capture signals not strong enough for automatic tuning, employ manual tuning.
  (It is recommended that the ATT switch be set to OFF.)
- For this purpose, press the TUNING button to MANUAL (▟).
- Then press either the - or + button depending on the search direction. Sweep tuning is performed only while the button is being pressed.
- When you capture a desired station, press the STORE button in the same manner as for automatic tuning, and the tuned-in station will be memorised.
- If the "-" or "+" button is pressed during auto-scan tuning, sweeping stops regardless of the position of the TUNING button.

Skipping unused channels

Though 32 channels are available for presetting to desired TV channels, you may not need all 32 channels. In such cases, unused channels can be skipped so that only preset channels will be called up. For this purpose, proceed as follows:

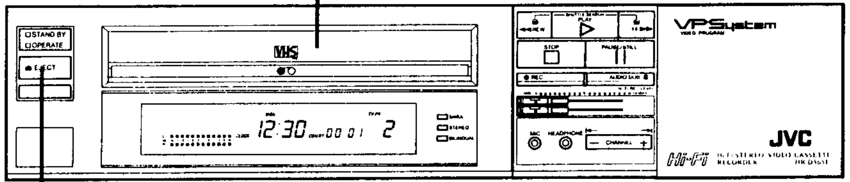
1) Press the CH SET button.
2) Call up the channel number that you wish to skip.
3) Press the SKIP button.
   - This completes the procedure for skipping the corresponding channel number.
4) Call up another channel number that you wish to skip and repeat the same procedure above.
5) Press the CH SET button to disengage this mode.

Notes:
- After this mode is disengaged, those skipped channel numbers will not appear on the channel display any more in modes other than Channel Set. (Using the numeric keys, it is possible to call up the skipped channels.)
- In the Channel Set mode, all channel numbers including skipped ones are successively displayed when the CHANNEL button is pressed.
- It is possible to restore the skipped channels for presetting to another TV channel whenever necessary. For this purpose, call up the corresponding channel number in the Channel Set mode and perform pre-tuning. Press the STORE button. Then, the new TV station channel is memorised to be called up at any time.

LOADING AND UNLOADING A CASSETTE

Loading
Insert a cassette with its labelled side facing you.
- With a cassette inserted, a door flap displays the ⊙ mark to indicate "cassette inserted".

Note:
It might be that, after unpacking your new recorder, the "cassette inserted" mark can be seen already. This does not indicate a defective unit. Simply insert a cassette. After the first loading/unloading cycle, the door will function properly; the flap with the mark will appear when a cassette is inside and be replaced with one without a mark when the cassette is removed.



Unloading
Press EJECT. The cassette will be ejected.

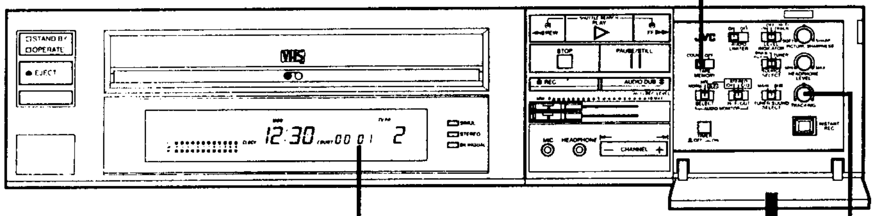
New motorised loading system
- The cassette can be loaded even when the power has not been turned on. Inserting a cassette into the loading slot turns the power on automatically.
- The cassette can be unloaded even when the power has been turned off. If a cassette is inside, pressing the EJECT button turns the power on automatically and, after ejection of the cassette, shuts it off automatically.

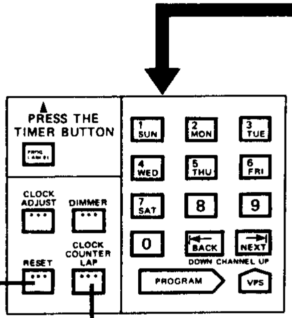
Notes:
- Be sure to insert the cassette firmly into the slot; otherwise, it will be automatically ejected.
- The automatic loading mechanism will operate only when the cassette is inserted correctly.
- A cassette inverted cannot be inserted.

Caution
- If loading or unloading of a cassette is not possible, check to see whether the TIMER button is in the ON position. If so, press it to the OFF (▲) position.
- Do not attempt to pull out the cassette once automatic loading has started.
- Do not insert fingers or any foreign object beyond the door flaps of the cassette loading slot, as this could lead to injury or damage to the mechanism. Show special caution with children.

TAPE COUNTER/ELAPSED RECORDING TIME COUNTER/COUNTER SEARCH/ TRACKING CONTROL

TAPE MEMORY switch
Counter Memory function
1. Press the CLOCK/COUNTER/LAP button to engage the Counter mode.
2. Press the RESET button at a point which you may wish to locate later.
   - The tape counter will indicate "0000".
3. Set the TAPE MEMORY switch to COUNT.
4. Press the REW (or FF) button when you need to return to the designated point. The tape will rewind (or fast forward) and stop at about the "0000" counter reading.





TRACKING control
If the playback picture contains noise bars or if noise or breaks are sensed in the reproduced hi-fi sound, perform tracking adjustment. For this purpose, set the LEVEL INDICATOR switch to Hi-Fi TRACK and turn the TRACKING control slowly in either direction so that the right-channel audio level meter shows the maximum level.

Note:
After playing back that particular cassette, be sure to return the TRACKING control to its centre position.

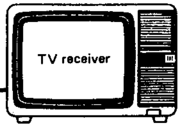
RESET button
Press to reset the tape counter to "0000" for indexing the tape or to reset the lap time to "0:00" for checking the elapsed recording time.

CLOCK/COUNTER/LAP button
When the OPERATE button is pressed, or a cassette is inserted, the tape counter appears on the display with the COUNT indicator illuminated. To check the elapsed recording time, press the CLOCK/COUNTER/LAP button to engage that mode. The LAP indicator will light and the reading will show the elapsed recording time in hours and minutes. To change the display mode back to the tape counter, press the same button once again.

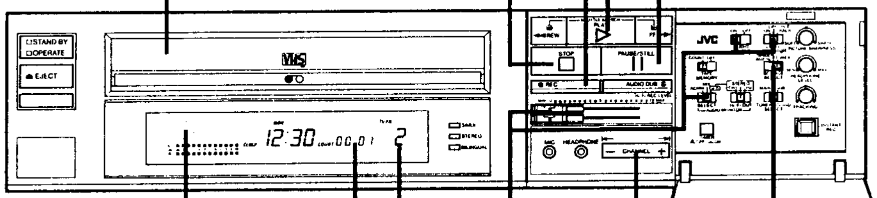
Notes:
- The lap time is counted up to 99 hours, 59 minutes.
- Unless the COUNTER RESET button is pressed in the LAP mode, the count is maintained even after the OPERATE button is pressed to off (as long as the unit is plugged into an AC outlet).
- When the LAP mode is engaged during playback, counting does not take place, although the current count is displayed.
- The CLOCK/COUNTER/LAP button can also be used to change the display from the Timer Set mode to the Clock mode.

BASIC OPERATION FOR RECORDING TV PROGRAMMES

1 Switch ON.
- Adjust the TV receiver's channel to your video channel.



This section describes the step-by-step procedure for recording a TV programme while watching it, assuming that it is a regular (monaural audio) programme.
For other recording options, refer to the next two pages where variations from this basic operation are described.



2 Load a cassette. Power will be switched on automatically.

3 Set to TUNER.

4 Select the channel you wish to record. (Numeric keys can also be used. Refer to page 6, ② of ㉚ .)

5 Hi-Fi audio recording level adjustment. Refer to page 12.
- For automatic level adjustment, simply set the AUDIO LIMITER switch to ON.

6 Press REC and PLAY simultaneously to start recording.

7 Press STOP at the end of the programme.

Notes:

- If there is part of the programme you don't want to record, press the PAUSE/STILL button. To release the Pause mode, press the PLAY button.
- When recording is restarted from the Pause mode, assemble recording is performed so that the playback picture will not distort at the edit point. A few frames recorded before the pause are erased due to overlap of the new recording. This is not due to any defect of the unit.
- When a recording containing assemble edits (segments recorded using the PAUSE function) is played back, noise may appear momentarily at edit points. This is not due to any defect of the unit.
- When the Pause mode continues for longer than about 5 minutes, the Stop mode will be entered automatically.
- The built-in tuner's automatic channel lock mechanism prevents the selected channel from being altered during recording. Therefore, if you wish to change the channel during recording, first engage the Pause mode and then select a different channel.
- Sound from a microphone connected to the MIC jack can be mixed with the TV sound being recorded.
- If the REC button cannot be engaged, check to see if the cassette safety tab has been removed. (See page 3.)
- When the end of the tape is reached during recording, the tape is automatically rewound to the beginning and stops.
- Press the CLOCK/COUNTER/LAP button to check how much recording time has elapsed. (For more details refer to page 18.)

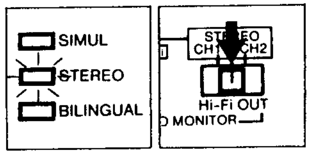
RECORDING A TV PROGRAMME WHILE WATCHING ANOTHER

A programme not being viewed can be recorded while you enjoy another programme. This permits the recorded programme to be played back later at your convenience.
The recording procedure is exactly the same as described on the previous page. The points to be remembered are:

- Select the channel you wish to record with the recorder's channel select buttons.
- Select the channel you wish to view with the TV receiver's channel selector.

RECORDING STEREO TV PROGRAMMES

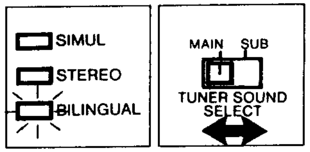
If stereo TV programmes are broadcast in your area, the HR-D565E automatically receives them in stereo. When a stereo programme is being received, the STEREO indicator lights and recording is made in stereo on the hi-fi audio track and in mono (mixed L + R) on the normal audio track. To listen to the stereo soundtrack during recording, set the AUDIO MONITOR SELECT switch to Hi-Fi and the AUDIO MONITOR Hi-Fi OUT switch to STEREO. If the latter is left either in the CH1 or CH2 position, you will hear only one channel while recording, though the recording is being made in stereo.



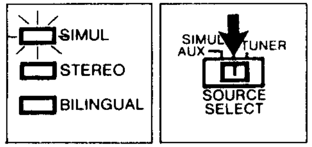
RECORDING BILINGUAL TV PROGRAMMES

When a bilingual TV programme is being received, the BILINGUAL indicator lights. There is a switch to select the soundtrack to be recorded on the normal audio track; however, because both soundtracks are recorded always on the hi-fi track for selective listening, you can ignore the switch labelled TUNER SOUND SELECT in most cases unless you need a specific soundtrack on the normal audio track.

- Set the TUNER SOUND SELECT to MAIN to record the main soundtrack (local language); to SUB to record the sub soundtrack (foreign language).
- To listen to the selected soundtrack from the hi-fi audio track while recording, set the AUDIO MONITOR SELECT to Hi-Fi and the AUDIO MONITOR Hi-Fi OUT to either channel.
- To listen to the soundtrack being recorded on the normal audio track, set the AUDIO MONITOR SELECT switch to NORM.



RECORDING FM SIMULCAST TV PROGRAMMES



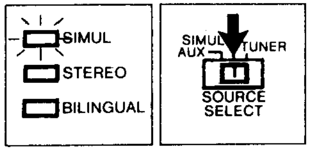
FM simulcast TV programmes can be recorded using an FM stereo tuner. Connect necessary components. (Connect the FM tuner to the rear panel AUDIO IN connectors.) Select the TV channel broadcasting the simulcast programme with the recorder's channel select buttons and tune the FM stereo tuner to the station broadcasting the soundtrack for this TV programme.
The only difference from the basic recording procedure is in step 3.

- Set the SOURCE SELECT switch to SIMUL.
  Then the SIMUL indicator will light. With this setting, the video and audio signals from the built-in tuner will be recorded on the video and normal audio track and the audio signal from the FM stereo tuner will be recorded on the hi-fi audio track.

Notes:

- After finishing recording, be sure to set the SOURCE SELECT switch to TUNER.
- While recording simulcast programmes, it might happen that the hi-fi sound distorts momentarily at switching points between different programmes. This is not due to any defect of the unit.

RECORDING A TV PROGRAMME WHILE RECORDING AN INDEPENDENT AUDIO SOURCE



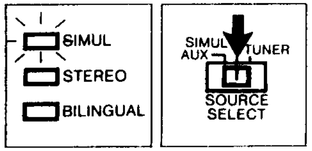
Using the "simulcast" recording function, you can record independent audio and video programmes, because the TV soundtrack is not lost, but recorded on the normal audio track. While recording a TV programme, record any audio source independently.

- Connect an audio component (such as an FM tuner) to the AUDIO IN connectors.
- Set the SOURCE SELECT switch to SIMUL.

Notes:

- If you stop recording to avoid unwanted material of the TV programme using the PAUSE/STILL button, the audio programme from an external source is also cut.
- If television broadcasting comes to an end during recording, the hi-fi sound being recorded from an external source may distort. It is recommended that you check the timetable of TV broadcasts in advance.
- After finishing recording, be sure to set the SOURCE SELECT switch to TUNER; otherwise recording on the hi-fi audio track from the built-in tuner will not be possible.

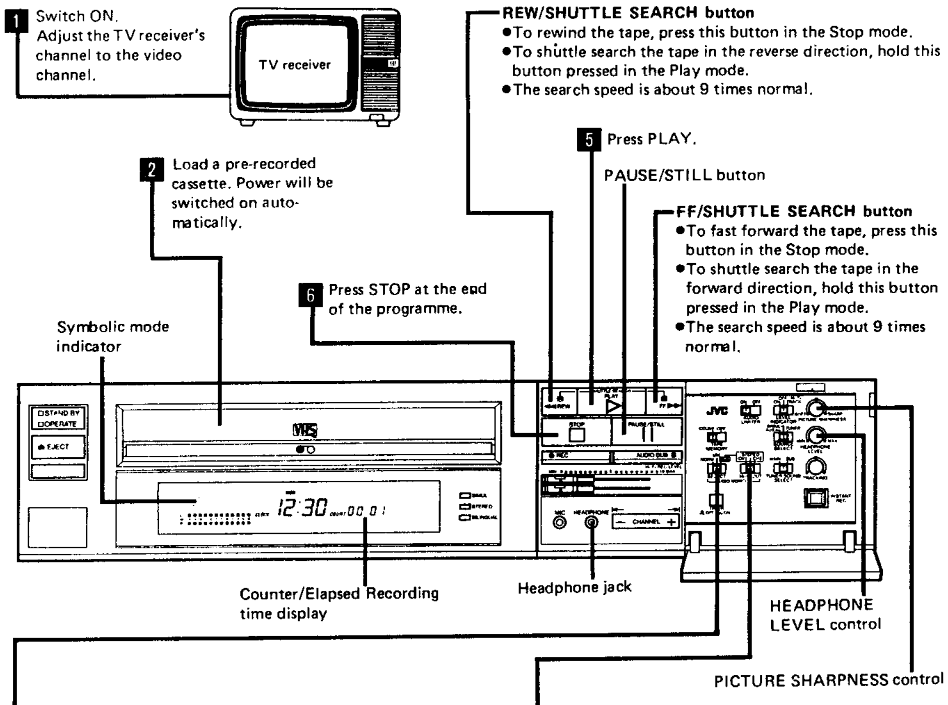
USING THE HR-D565E AS AN AUDIO DECK



You can record audio only (without recording any video signal) on the hi-fi audio track. This means you can record a continuous 4-hour FM programme onto a single cassette (E-240).

- Connect an audio source (such as an FM tuner) to the AUDIO IN connectors.
- Tune the built-in tuner to a vacant channel.
- Set the SOURCE SELECT switch to SIMUL.

PLAYING BACK A VIDEO CASSETTE



1 Switch ON.
Adjust the TV receiver's channel to the video channel.

2 Load a pre-recorded cassette. Power will be switched on automatically.

REW/SHUTTLE SEARCH button

- To rewind the tape, press this button in the Stop mode.
- To shuttle search the tape in the reverse direction, hold this button pressed in the Play mode.
- The search speed is about 9 times normal.

5 Press PLAY.

FF/SHUTTLE SEARCH button

- To fast forward the tape, press this button in the Stop mode.
- To shuttle search the tape in the forward direction, hold this button pressed in the Play mode.
- The search speed is about 9 times normal.

6 Press STOP at the end of the programme.

3 Set the AUDIO MONITOR SELECT switch as required.

- To play back hi-fi recorded tapes, set this switch to Hi-Fi.
- To play back tapes with mixed sound of hi-fi and normal audio tracks (to enjoy hi-fi audio while at the same time listening to a narration dubbed onto the normal audio track), set this switch to MIX.
- For normal monaural (or stereo) recorded tapes, set this switch to NORM.

4 Set the AUDIO MONITOR Hi-Fi OUT switch as required. (Effective only for hi-fi audio.)

- To play back hi-fi stereo tapes, set this switch to STEREO.
- To play back hi-fi tapes having independent soundtracks, set to the corresponding channel (CH1 or CH2):
- Hi-fi monaural tapes can be played back at any setting of this switch. However, it is advisable to set this switch to STEREO for better sound quality.

Notes:

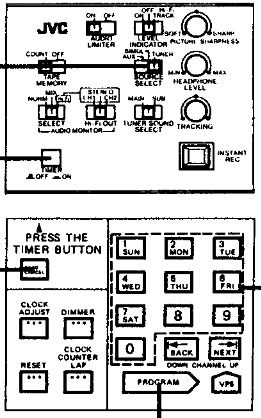
- The tape-end auto-rewind mechanism functions in both the Play and Fast Forward modes.
- When the PAUSE/STILL button is pressed during playback, a still picture will appear. The still picture can be advanced each time this button is pressed. Keeping this button pressed advances the picture continuously to give a slow-motion effect. To cancel the Still mode, press the PLAY button.
- Images on the screen can be adjusted to a preferred softer or sharper definition by turning the PICTURE SHARPNESS control in the corresponding direction.
- When the Still mode continues for longer than about 5 minutes, the Stop mode will be entered automatically.
- With some televisions, the still picture may be unstable. This is not due to any defect of the unit.
- When listening through headphones, if the volume is too weak or too loud, adjust the HEADPHONE LEVEL control for comfortable listening.
- If vertical vibration of the picture is noticed when operating in the Still mode, turn the rear panel V. LOCK screw slowly to correct it, referring to the TV screen.

AUTOMATIC VPS OR TIMER RECORDING

The built-in 4-event/1-year calendar timer permits recording of selected channels on preset days from preset start times to preset stop times.

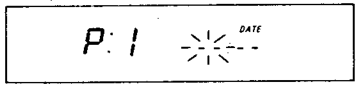
1 **First of all, load a cassette (with safety tab in place); power will be switched on automatically.** Then open the sub-control panel and programme the timer following the instructions below.

2 Set to TUNER.

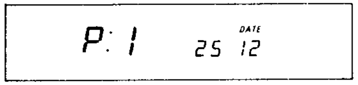


PROG. CANCEL button
To cancel the preset data. See next page.

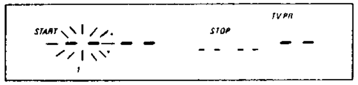
3 Press PROGRAM.
The display will change to the Timer Set mode with P:1 illuminating and the date display section flashing. You are ready to enter the data into No. 1 programme memory. To advance to programme numbers 2 – 4, press again. After programme 4, the Clock mode will be engaged.



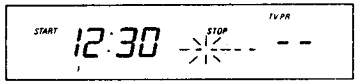
4 Enter the date using numeric keys.



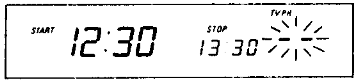
- ●Invalid numbers will be rejected.
- ●When both day and month data have been entered, the display will change to the time setting mode and the programme number will be displayed at the bottom of the FDP panel.
- ●To record a daily serial, move the cursor with the NEXT button to the START time setting without entering any date figure.



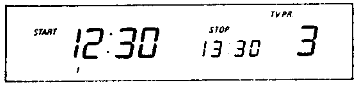
5 Key in the start time.
- ●To key in a one-digit number of hours or minutes, first press [0]. Then press the relevant numeric key.
- ●The minute digits will start flashing after keying in the hour.
- ●The hour digits of the "STOP" time will start flashing after keying in the start time.



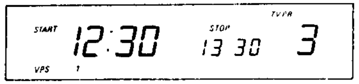
6 Key in the stop time in the same manner as the start time.
- ●The digits of the channel display will start flashing after keying in the stop time.



7 Enter the channel.
- ●To set a two-digit channel number, press [0] once for 10, twice for 20, three times for 30.
  For example, to set for channel 16, press [0] once and then [6]. To set channel 26, press [0] twice and then [6]. For channels 10, 20 and 30, allow for a few seconds after pressing [0] the required number of times.
  For a one-digit channel number, simply press the corresponding numeric key.



8 For VPS recording (refer to next page), press the VPS button.
- ●VPS will be displayed.



9 Press TIMER.
- ●The TIMER indicator will light.
- ●The display will return to the Clock mode, also showing the programme numbers for which recording data has been programmed.

IMPORTANT INFORMATION ON VPS AND TIMER RECORDING

VPS recording (VPS is a new broadcast system employed by TV stations in West Germany.)
VPS stands for the Video Programme System which adds flexibility to timer recording with a video cassette recorder. In this system, TV stations transmit special VPS codes using a multiplex system while certain programmes are being broadcast; the codes are different for different programmes. These VPS codes control the starting and stopping of the video recorder and have precedence over times preset in the timer. Using the VPS function, if a programme starts earlier or later than scheduled or overruns its scheduled time, it will be recorded from start to finish. The HR-D565E incorporates a VPS decoder which detects the VPS codes and controls power on/off and tape start/stop. First programme the timer, then, if you switch on the VPS function, all timer data – date, start time, stop time and channel – are converted to VPS codes and stored in memory. When the VPS function is not engaged, the timer starts and stops recording in the usual way.
The VPS function operates from 10 minutes before any preset start time to 4:00 on the following day. This means that if the required programme is broadcast within this period it will be recorded correctly.

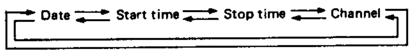
One-year calendar timer
"One-year" presetting capacity means that you can "reserve" a recording on any day, even one year in advance. One extreme case: If the date entry corresponds to the current day and the START time is set to a time before the current time, recording will start on the same day next year.

4-Programme timer
"4-Programme" presetting capacity means that you have 4 separate timers which contain different programming data. Because of this capacity, you can even "reserve" 4 different TV programmes, either on the same day or on different days.
Each programme (No. 1 through No. 4) contains information on "date" (or "daily"), "start time", "stop time", "TV channel number" and "VPS or regular".

Example of the contents of one programme entry:

Programme number	TV channel number	Date	Start time	Stop time	VPS
2	12	05:12	10:30	11:30	VPS

How to use the cursor keys [BACK] [NEXT]
- ●If you press a wrong key and the flashing position has advanced, press BACK to return to the previous position for correction.
- ●Once all data have been programmed, you can reach any position for correction using BACK or NEXT. The flashing position is ready for re-entry.
- ●The cursor (flashing position) advances or returns in the following order.



(Pressing PROGRAM engages the check mode in which no position flashes and data correction is not possible. To correct the data, press either cursor key; NEXT to move to "Date" or BACK to move to "Channel".

Setting the DATE, START and STOP times
- It is not possible to set the DATE, START and STOP times unless the date and the clock time have previously been set.
- Enter the data while the digit positions are flashing.
- Unless the START time has been properly set, STOP time setting is not possible.
- The STOP time can be set within 24 hours from the START time. If the hour setting for the STOP time runs into the following day, there is no need to set the day. Recording will stop at the preset time on the following day.
- Non-applicable numbers (such as January 32, February 30 for dates, 24 or larger for hours, 60 or larger for minutes and 33 or larger for channels) will be rejected when keyed in.

Last-channel memory
- The currently tuned channel locks in the Timer Set mode and, when the display returns to the Clock mode, the locked channel is displayed.

Cancelling the preset data
- The preset programmes can be cancelled by pressing the PROG. CANCEL button. For this purpose, first engage the Timer Set mode for the number you wish to cancel and then press the PROG. CANCEL button.
- Unless the VPS mode is engaged, an executed programme is automatically cleared.

Checking the programmed data
- Checking and re-programming can be performed anytime, even when the TIMER button has already been engaged in the ON position.
- While recording is actually taking place in the regular Timer mode, the STOP time can be changed. For this purpose, engage the Timer Set mode and move the cursor; only "STOP" time will flash. This means you can re-programme the stop time.
- While recording is actually taking place according to one preset programme, all other preset programmes can be checked or re-programmed.

TIMER indicator

- When the TIMER button is pressed to ON with a cassette loaded and the timer correctly programmed, the TIMER indicator on the display will light with the corresponding programme number(s) also lighting and the power is turned off.
- When you have preset several programmes at a time, confirm that all the preset programme numbers light together with the TIMER indicator when the TIMER button is pressed. The programme whose number does not light has not been correctly preset. Recheck the programmed data.
- Programming errors include cáses where either "START" or "STOP" time has not been preset, or both these preset times are the same. A "no-channel-programmed" situation is not interpreted as an error, and recording will be made of the currently tuned channel.
- If all programmes have been wrongly preset, the TIMER indicator will flash for about 10 seconds when the TIMER button is pressed, and remain lit.
- If the TIMER button is pressed when a cassette is not loaded, the TIMER indicator will continue blinking.
- If a cassette with its safety tab removed has been loaded, it will be ejected automatically when the TIMER button is pressed. The TIMER indicator will continue blinking.
- As long as the TIMER button is in the ON position, loading or unloading of a cassette is not possible.
- To re-load a cassette after the TIMER button is pressed to ON (the OPERATE indicator turns off), press it once to OFF. Although the OPERATE indicator remains off, you can load a cassette (the OPERATE indicator lights). Then press the TIMER button once again to ON.

VPS operation

- Ten minutes before the preset start time, the tuner circuit switches on and the recorder enters the VPS standby mode with "VPS" illuminated and the programme number blinking on the FDP display.
- When a VPS code corresponding to the intended TV programme is detected, recording will start. When the VPS code changes to another, recording will stop.
- If no VPS code is detected during the VPS standby mode (for example, the tuned-in station does not transmit VPS codes), ordinary timer recording will be engaged; recording will start at the preset time and stop at the preset time.
- When an interruption code is detected during VPS recording, the recorder enters the VPS standby mode and restarts recording when the regular VPS code is restored.
- When the VPS code stops for some reason during VPS recording, recording will stop at the preset stop time.
- If a system status code which cancels VPS recording is detected during the VPS standby mode, ordinary timer recording will be engaged.
- During VPS recording, the number of the programme that is presently operating will be flashing with "VPS" illuminated.
- After VPS recording, the power is switched off and the auto rewind mechanism does not function. If the end of the tape is reached during VPS recording, the cassette is automatically ejected and then the power is switched off.

Regular timer operation

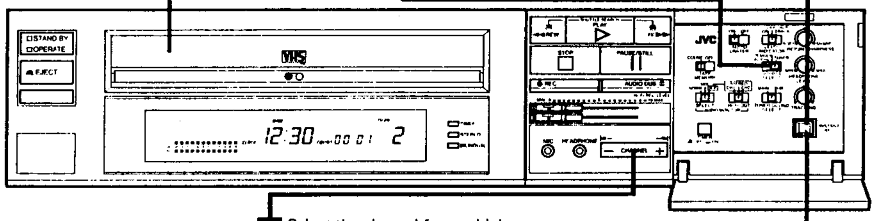
- If the VPS mode is not engaged, tape loading starts 10 seconds before the preset START time and the recording start signal is triggered 2 seconds before the preset time so that recording starts exactly at the preset time.
- During timer recording, the number of the programme that is presently operating will be flashing.
- Operation at the end of recording is the same as with VPS operation.

Programme priority

- If several programmes have preset times which overlap, as a rule, VPS programmes have priority and, among VPS programmes, the smaller programme number has priority.

INSTANT RECORDING

Besides starting and stopping a recording as usual, the HR-D565E offers a more convenient possibility: starting by the push of a single button, and recording will stop automatically after a certain period of time. Use this facility for starting a recording before you go to bed or leave home.

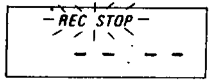


1 Load a cassette.

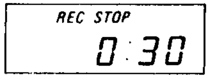
2 Set to TUNER.

3 Select the channel from which you want to record.
(Numeric keys can also be used.)

4 Press INSTANT REC.
- The following indication will appear on the display, to show that the recorder is ready to start recording.
- The REC STOP indicator on the display will flash.



5 Press INSTANT REC once again.
- Recording will begin immediately and the following indication will appear on the display, showing that recording will automatically stop and power will switch off after 30 minutes.
- The REC STOP indicator remains lit.

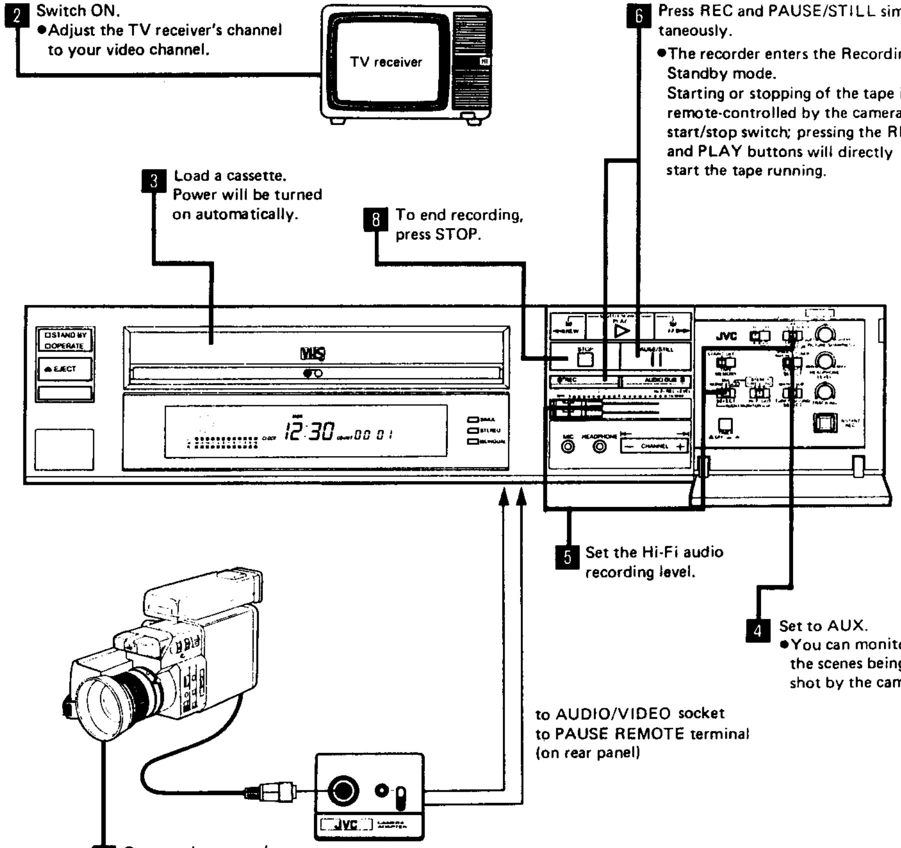


6 Each time the INSTANT REC button is pressed, recording time increases by 30 minutes up to 4 hours.
- For a more precise time setting, use the numeric keys after recording has started. To change both hour and minute digits, simply key in the corresponding numbers. To change only the minute digits, press the numeric key corresponding the current hour number, and the cursor will move to the minute position, thereafter the cursor keys will function to move to both hour and minute digits for new entries. After this setting, be sure to press the INSTANT REC button again, otherwise the original preset time will be restored in a few seconds.

Notes:

- If the INSTANT REC button is not pressed a second time within about 10 seconds after it has been pressed once, the Instant Record mode will be cancelled and the display will change back to the Counter mode.
- If you want to change the time setting again after the INSTANT REC button has been pressed for memorisation of new data, simply press INSTANT REC and redo the programming.
- While recording is in progress, the displayed time counts down; when 0:00 is reached, the Record mode is released after 10 seconds and the power is switched off.
- If you want to stop recording after having started recording in the Instant Record mode, press the STOP button.
- The instant recording function can also be used as a sleep timer. If you press the INSTANT REC button during normal recording, the REC STOP indicator will light on the display and the indication "0:30" will be obtained, showing that recording will stop automatically after 30 minutes. The time span can be adjusted in the same way as for instant recording.
- Instant recording has priority over all other modes except VPS recording; you can start recording from any mode using the INSTANT REC button, even from rewind or fast forward, or from power off (as long as the power cord is plugged in).
- If the start time of one preset VPS programme is reached during instant recording, the Instant Record mode is immediately cancelled and the VPS programme is executed. During VPS recording, the INSTANT REC button does not function at all.
- If the INSTANT REC button is pressed with a non-recordable cassette loaded (one with its safety tab removed), the cassette will be automatically ejected.
- If you want to perform instant recording after you have set the timer and pressed the TIMER button to ON, press the INSTANT REC button as usual. Power will be turned on and instant recording will start. After instant recording has been performed, the Timer mode is automatically re-entered and power is turned off.
- If the programmed switch-on time for a timer recording should come after the switch-off time of the instant recording, this timer recording will still be made automatically.

RECORDING WITH A VIDEO CAMERA



1 Connect a video camera.
- First make connections. Then power ON.

2 Switch ON.
- Adjust the TV receiver's channel to your video channel.

3 Load a cassette. Power will be turned on automatically.

4 Set to AUX.
- You can monitor the scenes being shot by the camera.

5 Set the Hi-Fi audio recording level.

6 Press REC and PAUSE/STILL simultaneously.
- The recorder enters the Recording Standby mode. Starting or stopping of the tape is remote-controlled by the camera's start/stop switch; pressing the REC and PLAY buttons will directly start the tape running.

7 Operate the camera's start/stop switch.
- Now recording will start.

8 To end recording, press STOP.

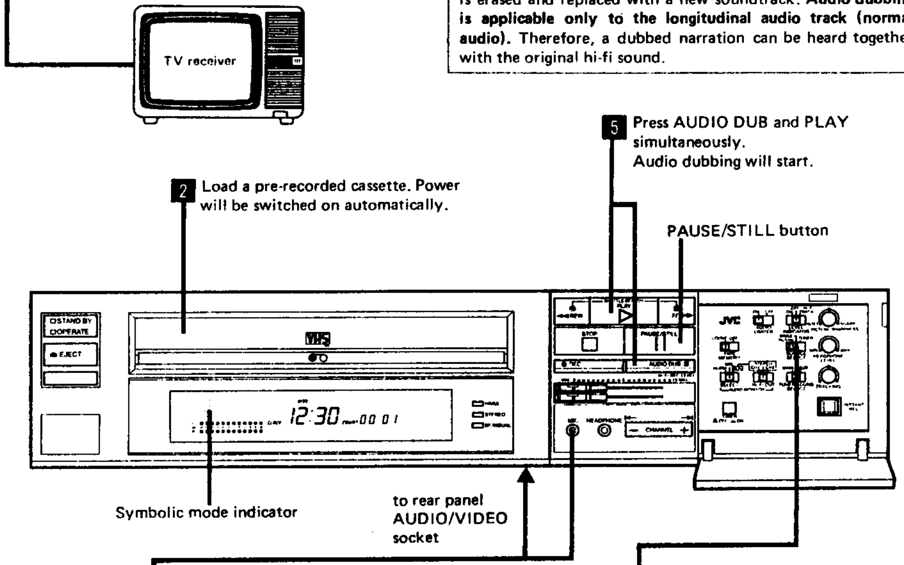
to AUDIO/VIDEO socket
to PAUSE REMOTE terminal
(on rear panel)

Camera adapter

Notes:
- If a microphone is connected to the HR-D565E's MIC jack, this microphone input is recorded mixed with the camera's built-in microphone.
- If feedback noise (whistling or howling) is heard from the TV receiver, reduce the volume or move the microphone, either external or built within the camera, farther away from the TV receiver.
- With a camera equipped with an electronic viewfinder, it is possible to monitor the playback picture on the camera's viewfinder.
- For camera operation refer to the instruction manual for the relevant camera.

AUDIO DUBBING

Audio dubbing means recording a new soundtrack on a pre-recorded tape. In other words, the previously recorded sound is erased and replaced with a new soundtrack. **Audio dubbing is applicable only to the longitudinal audio track (normal audio).** Therefore, a dubbed narration can be heard together with the original hi-fi sound.



1 Switch ON.
- Adjust the TV receiver's channel to your video channel.

2 Load a pre-recorded cassette. Power will be switched on automatically.

3 Connect a microphone or an audio source to the MIC jack or the AUDIO/VIDEO socket respectively.
- With both microphone and audio source connected, mixed sound is recorded.

4 Set to AUX.
- If you record sound only from the microphone, the source equipment connected to the AUDIO/VIDEO socket should be OFF.

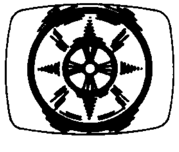
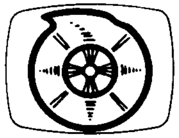
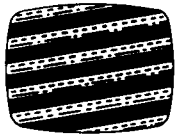
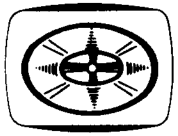
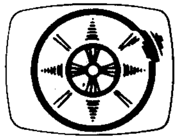
5 Press AUDIO DUB and PLAY simultaneously. Audio dubbing will start.

Notes:
- It is recommended that you use a low-impedance microphone.
- If whistling or howling is heard during audio dubbing, reduce the TV volume or move the microphone farther away from the TV. Recording is being performed even if sound is not heard from the TV receiver. If you want to monitor the sound being recorded, connect headphones to the HEADPHONE jack.
- The pause function facilitates audio dubbing. First play back the pre-recorded tape and press the PAUSE/STILL button at the point from which you wish to start audio dubbing. If necessary, adjust the point accurately by pressing the PAUSE/STILL button a few more times. Then press the AUDIO DUB and PLAY buttons simultaneously. This permits you to start audio dubbing exactly at the right point.

CAUTION:
Audio dubbing is not possible with an audio source connected to the rear panel AUDIO IN connectors.

ADJUST YOUR TV RECEIVER WHEN . . . .

Still Playback may require adjusting your TV receiver. If your TV receiver shows the following symptoms during Still Playback, adjust the TV receiver first.

Symptom	Adjustment
Picture vibrates vertically. 	Turn the V-Hold knob slightly for stabilising.*
The upper portion of the picture drifts horizontally. 	Turn the H-Hold knob slightly for stabilising.**
Picture rolls. 	Turn the H-Hold knob slightly for stabilising.**
Picture is flattened vertically. 	Inherent in your TV receiver.
Only a portion of the picture continues to flicker. 	Not adjustable. Inherent in your TV receiver.

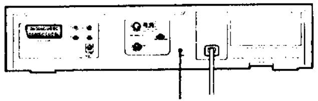
HEAD CLEANING

- Picture playback may become blurred or interrupted while the TV programme received is clear. This does not mean that the recorded programme has been erased.
- Dirt accumulated on the video heads after long periods of use causes such troubles. In this case, head cleaning requiring highly technical care is necessary.

*For head cleaning, consult the nearest JVC dealer.

If the V-Hold and H-Hold knobs are not provided on your TV receiver, please consult your JVC dealer.

Rear



* If an unsatisfactory result is obtained, adjust the V. LOCK control located on the rear panel of the HR-D565E so that a stable picture is obtained.

** If an unsatisfactory result is obtained, it is necessary to adjust the AFC circuit of the TV receiver.

IN CASE OF DIFFICULTY

What may initially appear to be trouble is not always a real problem. Make sure first . . . .

POWER AND TAPE TRANSPORT PROBLEMS

Symptoms	Check points
No power is applied to the recorder.	● Is the power cord disconnected? – Connect it.
Clock is functioning properly, but the recorder cannot be powered.	● Is the TIMER button pressed to ON? – Press it to OFF.
Tape does not run during recording.	● Is the PAUSE/STILL button engaged? – Press the PLAY button.
Tape stops in the Rewind or Fast Forward mode.	● Is the TAPE MEMORY switch set to COUNT? – Set it to OFF.
Tape will not rewind or fast forward.	● Is the tape already fully rewound or fast forwarded? – Check the cassette.

RECORDING PROBLEMS

Symptoms	Check points
Recording cannot be started.	● Is a cassette loaded? ● Is the safety tab on the cassette removed? – Reseal the slot with cellophane tape.
TV broadcasts cannot be recorded.	● Is the SOURCE SELECT switch set AUX? – Set it to TUNER.
Camera recording is not possible.	● Are the camera and the camera adapter correctly connected? ● Is the power switch of the camera adapter set to ON? ● Is the SOURCE SELECT switch set to a position other than AUX? – Set it to AUX.
Simulcast recording is not possible.	● Is the SOURCE SELECT switch set to a position other than SIMUL? – Set it to SIMUL. ● Is an audio source correctly connected to the AUDIO IN connectors? – Check connections.
Timer recording is not possible.	● Have you set the clock correctly and programmed the timer correctly? – Check once again. ● Is the TIMER button in the OFF position? – Press it to ON.
Audio dubbing is not possible.	● Is the safety tab on the cassette removed? – Reseal the slot with cellophane tape.

PLAYBACK PROBLEMS

Symptoms	Check points
Playback picture does not appear while the tape is running.	● Is the TV receiver's channel selector set to the correct video channel? – Set it to the RF converter channel. (See page 10.)
Noise appears on the search and still pictures.	● This is normal.
Noise appears during normal playback.	● Adjust the TRACKING control.
Playback picture is blurred or interrupted while TV broadcasts are clear.	● Video heads may be dirty. – Head cleaning is necessary. Consult your nearest JVC dealer.
Playback sound is different from that intended to be recorded.	● Is a microphone plugged in? – Unplug it.

HI-FI AUDIO PROBLEMS

Symptoms	Check points
TV sound cannot be recorded on hi-fi audio track.	● Is the SOURCE SELECT switch set to SIMUL? – Set it to TUNER.
Breaks are noticeable in hi-fi audio reproduction.	● Adjust with the TRACKING control. (See page 12.) ● Have you adjusted the recording level correctly? – Over-level recordings could be a cause. Adjust the level correctly next time. See page 12.
Soundtrack on the hi-fi audio track cannot be reproduced.	● Is the AUDIO MONITOR SELECT switch set to NORM? – Set it to Hi-Fi.
Audio level indicators do not function.	● Is the LEVEL INDICATOR switch set to a position other than ON? – Set it to ON.

OTHERS

Symptoms	Check points
Whistling or howling is heard from TV.	● Move camera or microphone away from TV or reduce TV sound volume.
Clock setting is not possible.	● Is the TIMER button pressed to ON? – Press it to OFF.
Some channels are skipped over when selecting a channel.	● Those channels are preset to be skipped over. If you need them, restore them.
Channel cannot be switched.	● Is recording in progress? – During recording, you cannot change the channel.

This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the power off and unplug the power cord. Then plug it in again and switch on. Take out the cassette. After checking the cassette, operate the unit as usual.

SECTION 1
MECHANICAL ADJUSTMENTS

1.1 GENERAL

1.1.1 Precautions

- IMPORTANT

1. Disconnect from power before removing or soldering components.
2. The tape transport mechanism has been precisely adjusted at the factory and ordinarily does not require re-adjustment.
3. Tighten the screws carefully to avoid damage to the chassis.

Test equipment required :

Color television or monitor
Oscilloscope : wide-band, dual trace, triggered, delayed sweep
Recording tape
Alignment tapes

1.1.2 Required jigs and tools

For proper mechanical adjustment, the following jigs and tools are strongly recommended. Without them, a long trial-and-error period would be necessary, resulting in possible damage. In addition, general-purpose tools and a metric hex key (obtain locally) are required.

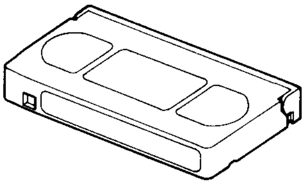
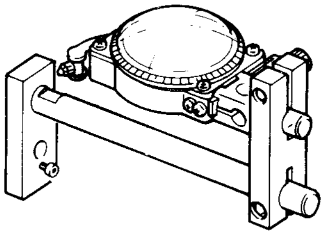
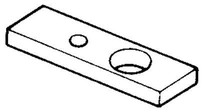
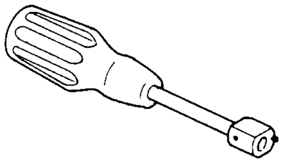
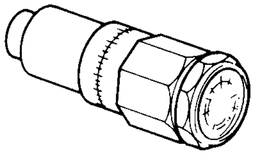
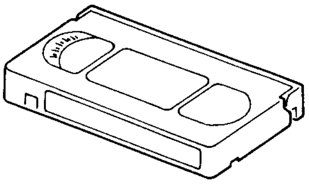
JVC alignment tape MH-2/MH-F2 	Micro-checker PUJ49712-2 	Spacer PUJ44905 (for micro-checker) 
A/CTL head position tool PUJ47351-2 	Torque gauge ass'y PUJ48075-2 (Torque meter : 600ATG Torque gauge head : PUJ48016-2) 	Back tension cassette gauge PUJ48076 

Table 1-1-1 Jigs and tools

1.1.3 Disassembly

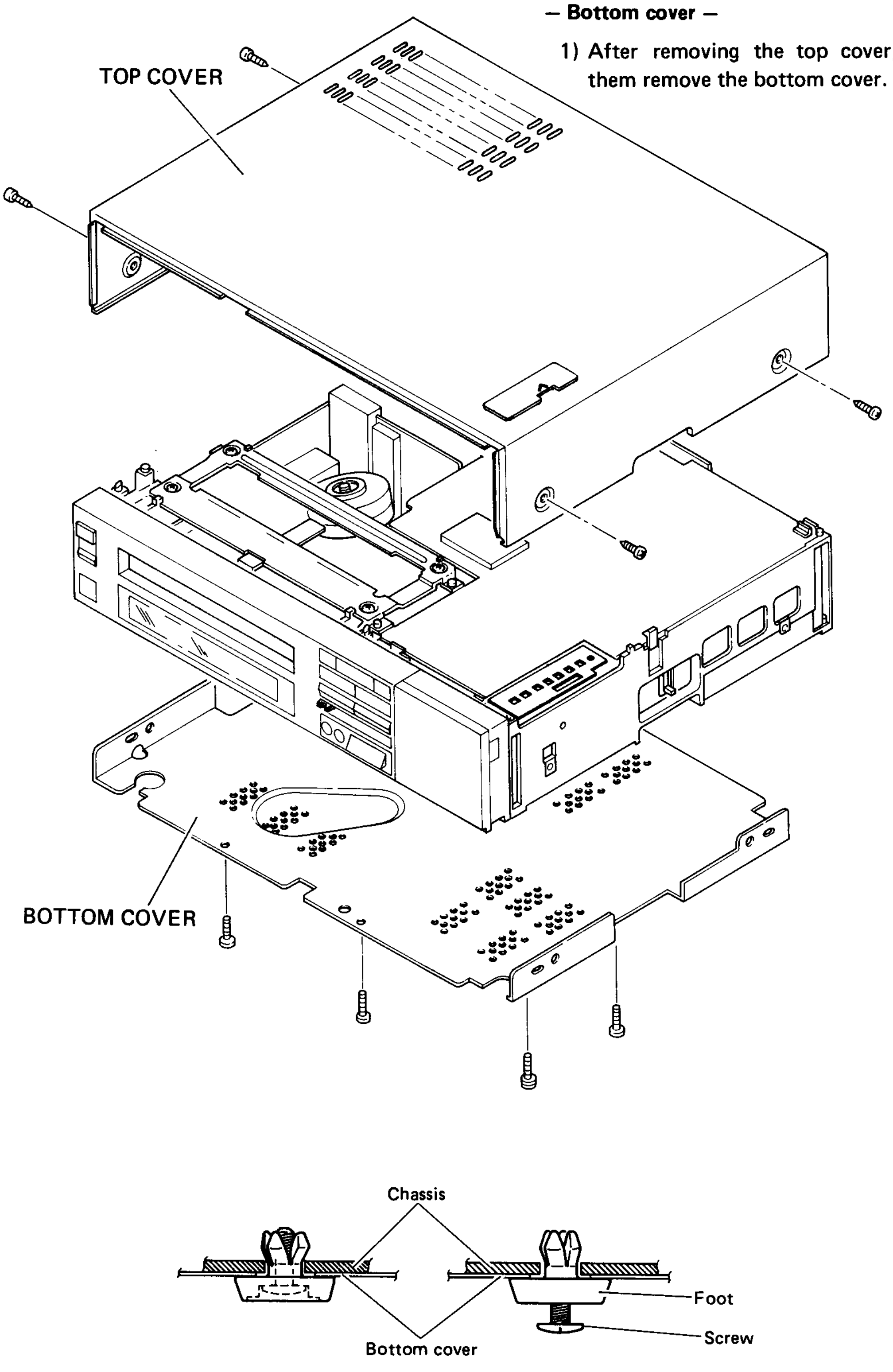
1. Top cover and bottom cover

– **Top cover** –

1) Take out four screws, then remove the top cover in the arrow direction.

– **Bottom cover** –

1) After removing the top cover, take out four screws, them remove the bottom cover.


TOP COVER
BOTTOM COVER
Chassis
Foot
Screw
Bottom cover

Foot is fixed on the chassis

Foot is able to be removed

Fig. 1-1-1 Top cover/bottom cover

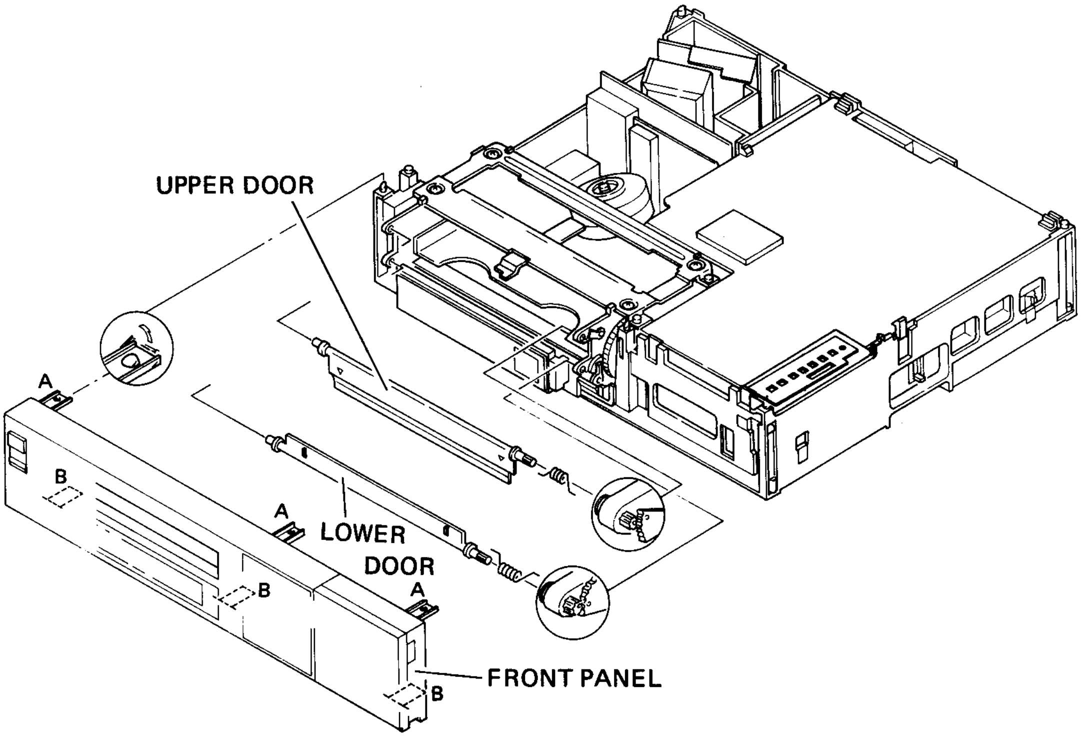
2. Front panel and cassette doors

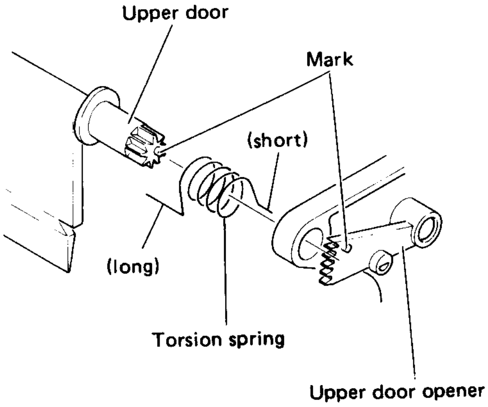
— Front panel —

1) After removing the top cover, bend three points A of the front panel upwards to disengage them from the chassis, then pull the front panel outwards.
2) Disengage three points B of the front panel from the chassis for removing the front panel.

— Cassette doors —

1) Move the lower door fully to the right, then disengage the left end of the lower door from the cassette housing.
2) Pull the lower door out to the left. Use care regarding the torsion spring.
3) Remove the upper door in the same manner as the lower door.





Notes:

When reassembling the doors, proceed as follows:

1) Locate the mark on the gear portion of the upper door.
2) Set the long straight part of the torsion spring toward the upper door.
3) Install the upper door so that the mark noted in Step 1) is aligned with the mark on the upper door opener of the cassette housing.
4) Install the lower door in the same manner as the upper door.

Fig. 1-1-2 Front panel/cassette doors

1.2 PERIODIC MAINTENANCE

The following procedures are recommended for maintaining optimum performance and reliability of this video cassette recorder.

1.2.1 Layout of maintenance parts

1. Top view

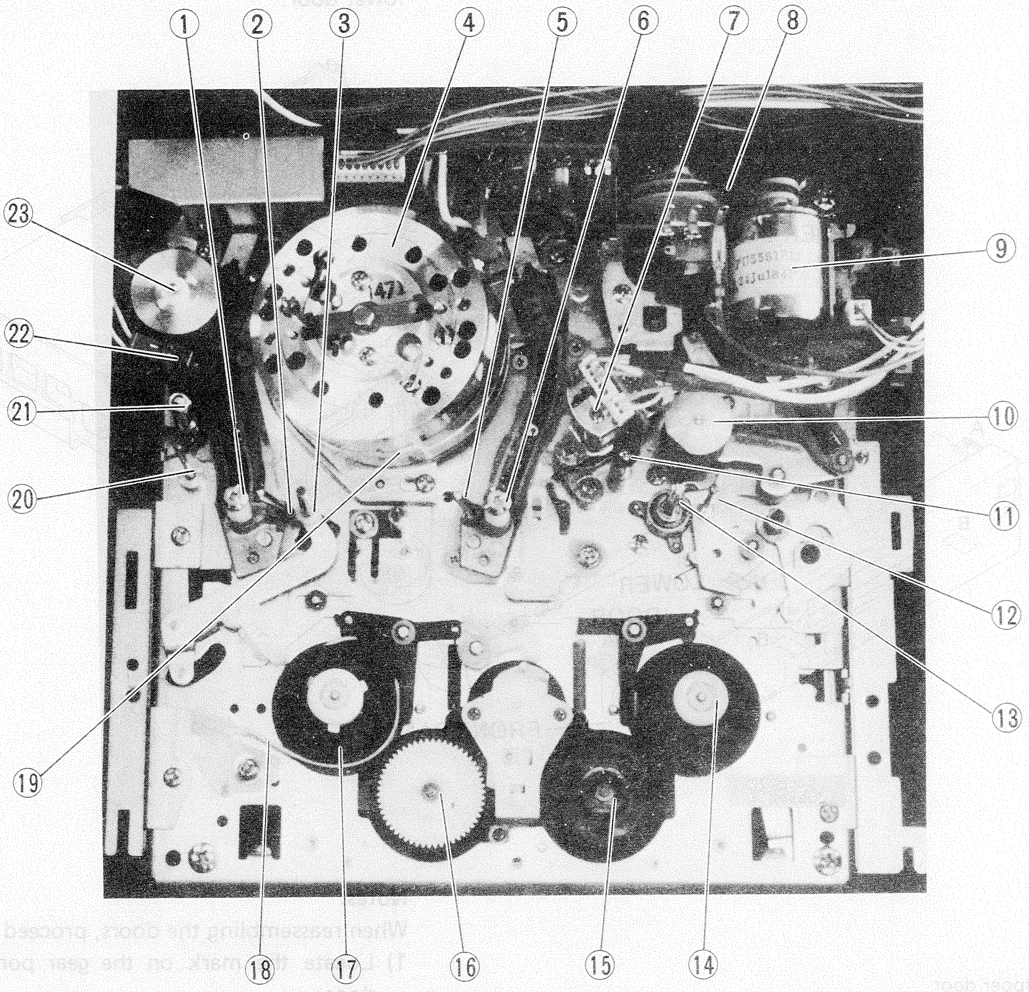

①
②
③
④
⑤
⑥
⑦
⑧
㉓
⑨
㉒
㉑
⑩
⑳
⑪
⑫
⑬
⑲
⑱
⑰
⑯
⑮
⑭

Fig. 1-2-1 Top view

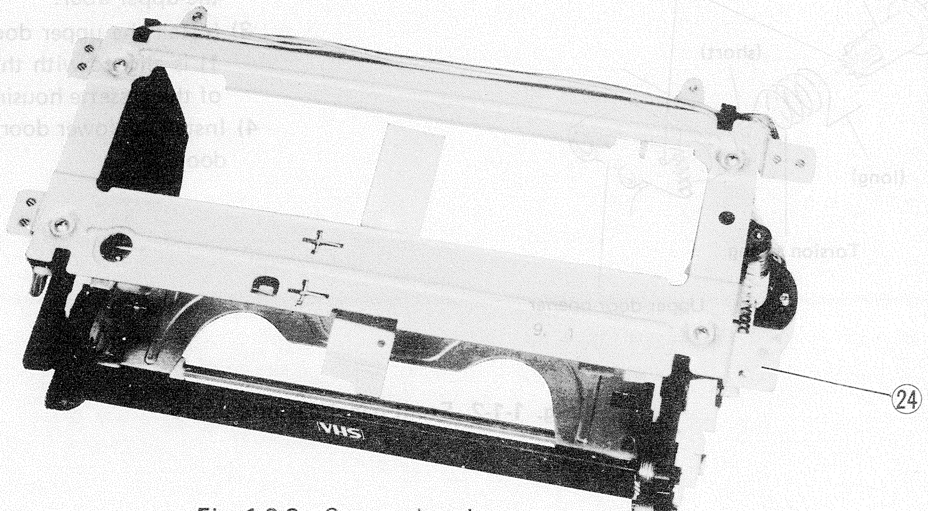


Fig. 1-2-2 Cassette housing

2. Bottom view

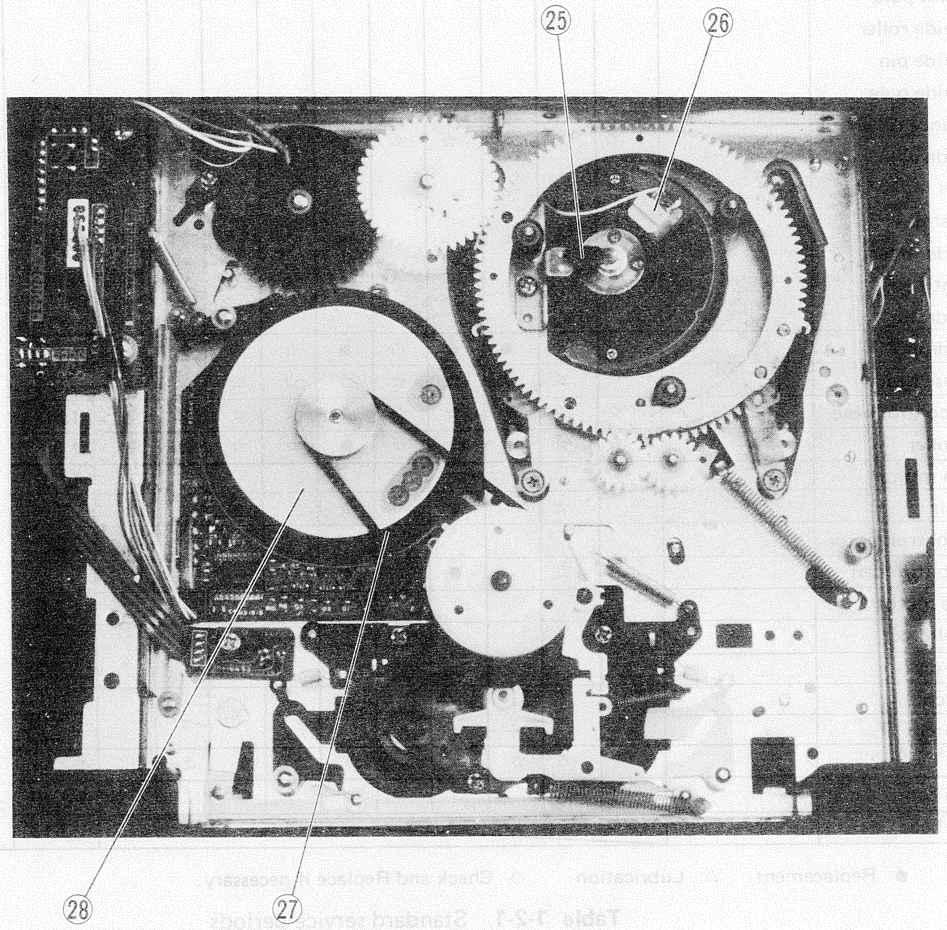


Fig. 1-2-3 Bottom view

1 SUP guide roller
2 SUP slant pole
3 Tension pole
4 Upper drum
5 T.U. slant pole
6 T.U. guide roller
7 Audio/Control head
8 Motor control belt
9 Mode control motor
10 Pinch roller
11 T.U. guide pole
12 Guide arm
13 Capstan
14 T.U. reel disk
15 T.U. clutch
16 SUP clutch
17 SUP reel disk
18 Tension band
19 Lower drum
20 SUP guide pin
21 SUP guide pole
22 Full erase head
23 Impedance roller
24 Cassette motor
25 Brush
26 Pick-up head
27 Reel belt
28 Capstan motor

T.U. : Take-up
SUP : Supply

1.2.2 Service schedule for main components

The following table lists the parts which should receive periodic servicing at the recommended intervals.

	Part Name	Replacement Part No.	Periodic Service Schedule (Operating Hours)										Reference Section	Remarks
			500	1000	1500	2000	2500	3000	3500	4000	4500	5000		
Tape transport system	Tension pole SUP slant pole SUP guide roller SUP guide pin SUP guide pole Impedance roller TU guide pole Capstan Guide arm TU guide roller TU slant pole Lower drum		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆		• For cleaning, use a lint-free cloth or gauze dampened with alcohol. • After cleaning with alcohol, allow the parts to dry thoroughly before using a cassette tape.
	Upper drum		☆	○	●	☆	○	●	☆	○	●	☆	1.3.2	– When cleaning the head tips on the upper drum, do not clean them with a vertical stroke. Use only a gentle back and forth motion in the direction of the tape path.
	Full erase head		☆	☆	☆	☆	☆	☆	☆	☆	☆	○	1.3.3	
	Audio/control head		☆	☆	☆	☆	☆	●	☆	☆	☆	☆	1.3.4	
	Pinch roller		☆	☆	☆	☆	☆	●	☆	☆	☆	☆	1.3.5	
Drive system	Capstan motor											○	1.3.6	
	Reel belt			☆		●		☆		●		☆		
	Mode control motor											○	1.3.7	
	Mode control belt			☆		●		☆		●		☆		
	Cassette motor											○	1.3.8	
	SUP reel disk					△				△		○	1.3.9	– Do not over lubricate.
	TU reel disk													
	TU clutch			○		○		○		○		○	1.3.10	– Torque check (refer to section 1.4.3).
	SUP clutch													
Others	Brush		☆	☆	☆	☆	☆	☆	☆	☆	☆	○	1.3.11	
	Tension band			○		○		○		○		○	1.3.12	– Back tension check (refer to section 1.4.4)
	Pick-up head												1.3.13	

☆ Cleaning ● Replacement △ Lubrication ○ Check and Replace if necessary.

Table 1-2-1 Standard service periods

Above replacement times will vary greatly according to environmental and usage conditions. Routine inspection and maintenance are also important factors that influence the unit life. Note that rubber parts may become aged or deformed after long periods of storage, even if the unit is not used.

Note: Even if the unit is not used frequently, cleaning, lubrication and replacement of the belts should be undertaken every 2 years.

1.3 MAIN ASSEMBLY REPLACEMENT

Remove the external covers and the circuit boards, as necessary, to allow replacement.

1.3.1 Cassette housing

- Removal of cassette housing

1. Take out screws ① and disengage the four stoppers from V/A/F board, then raise V/A/F board upwards.
2. Disconnect connector CN1, coming from the V/A/F board, from the CASS. HOUSING board.
3. Take out four screws ② and remove the earth plate.
4. Carefully lift the cassette housing upwards to remove it.

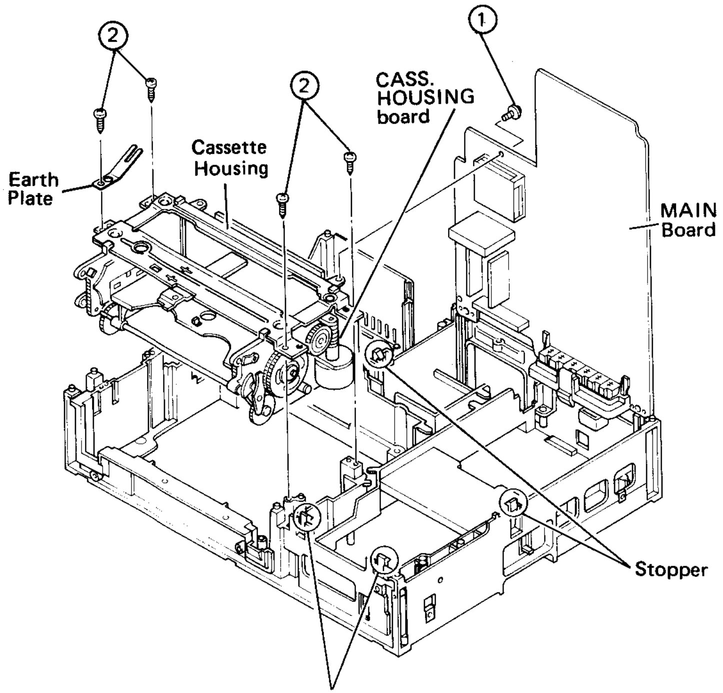


Fig. 1-3-1 Removal of cassette housing

- How to operate the set without loading a tape cassette

For service procedures that call for operation of the set without loading the tape around the head drum, extract the cassette housing from the interior of the set and position it as described below.

1. Set a sheet of insulated material (cardboard, plastics, etc.) on the right side of chassis.
2. Remove the cassette housing from the interior of the set and place it on the insulated sheeting, but do not disconnect the connector from the V/A/F board.
3. Insert a cassette into the cassette housing. The housing mechanism functions to retract the cassette.

Notes:

1) To prevent alignment tape from miss-erasure, insert the cassette without safety tab into the cassette housing.
2) Confirm that the cassette is not at tape end or tape start position.

4. Since the required sensors are contained within the housing, after the cassette has been retracted, the desired modes can then be obtained by using the operation switches.

1.3.2 Upper drum

1. Unsolder the wires connecting the lower drum from the relay pins of the upper drum (perform quickly to avoid damaging the wires by overheating).

RELAY PIN COLOR	CHANNEL	INNER/OUTER
Brown	SP. CH-1	Brown/Light blue
Red	SP. CH-2	Red/Clear
Gray	A-1	Violet/Green
Gray	A-2	Gray/White

Table 1-3-1 Upper drum wiring

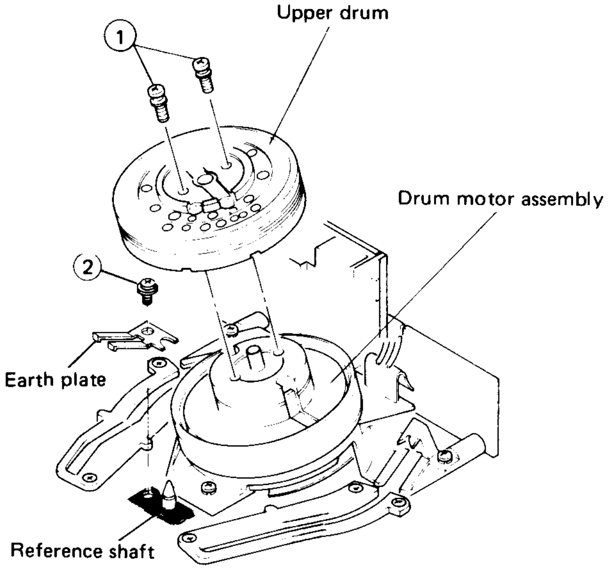


Fig. 1-3-2 Upper drum replacement

2. Take out two screws ① and remove the upper drum in the upward direction.
3. Use alcohol to clean the lower face of the new upper drum and the upper face of the lower drum. When handling and installing the new upper drum, avoid directly touching the head tips and use care not to scratch the drum.
4. Reassemble by reversing the above steps. When resoldering, observe the correct channels (refer to Table 1-3-1) and avoid overheating the wires.

5. Perform the upper drum eccentricity adjustment.

1) Supply power and set for the Play mode without a cassette housing (refer to section 1.3.1). After completion of loading, disconnect from power.
2) Take out screw ② and remove the earth plate as shown in Fig. 1-3-2.
3) Set the micro-checker on the reference shaft as shown in Fig. 1-3-3. Use a hex wrench (metric) to tighten the mounting screw.

Caution: The micro-checker is a test fixture for measuring eccentricity of the upper drum.
When using this fixture, observe the following precautions.

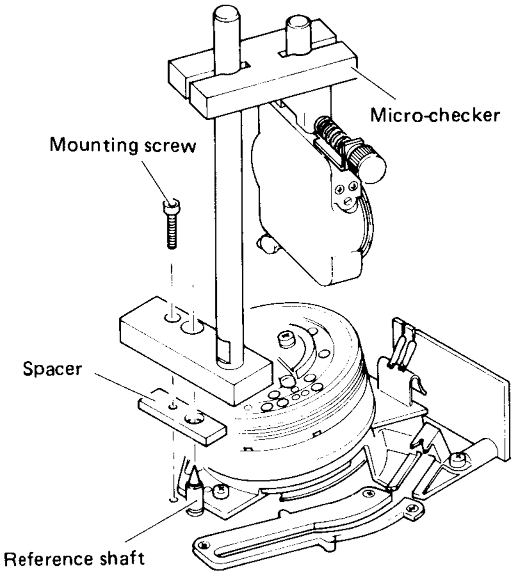


Fig. 1-3-3 Micro-checker mounting

- **As the instrument is extremely precise, use special care not to drop it or subject it to strong vibration.**
- Do not apply strong force to the test probe.
- The outer frame of the scale can be turned about 7 scale divisions. Do not turn it forcibly (force greater than 300 g-cm).
- **Use care that the test fixture does not contact the video heads.**
- Before mounting, turn the fine adjust knob counter clockwise (to where the spring tension is no longer felt).
- **Do not apply power while the test fixture is installed.**

4) Check and readjust the micro-checker position. The correct position is achieved when:
   - The test probe contact point is 2 or 3 mm under the top surface of the upper drum.
   - The test probe movement direction is toward the center portion of the upper drum.
5) Gradually turn the fine adjust knob clockwise so that the test probe contacts the upper drum. The dial indicator registers zero on the scale.
6) While using care not to apply lateral pressure to the upper drum, slowly turn the upper drum and read the deviations indicated by the micro-checker.

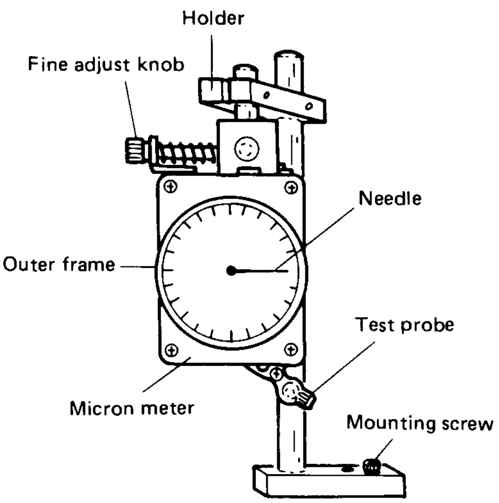


Fig. 1-3-4 Micro-checker

7) Check for needle deflection within 4 microns.
8) If deviation is greater than 4 microns, after turning the fine adjust knob counterclockwise to disengage the test probe from the upper drum, loosen two screws ① and carefully readjust the upper drum position, then retighten the two screws in a balanced manner. Repeat above steps 4) to 6).
9) After using, turn the fine adjust knob counterclockwise and remove the micro-checker.
10) After reinstalling the earth plate, supply power and set for the Stop mode.

6. Perform the interchangeability adjustment (refer to section 1.4.6).

1.3.3 Full erase head

1. Disconnect the connector CN1 from the full erase head.
2. Take out screw ① and remove the full erase head from the erase head arm.
3. Replace the full erase head and reassemble by reversing the above steps.

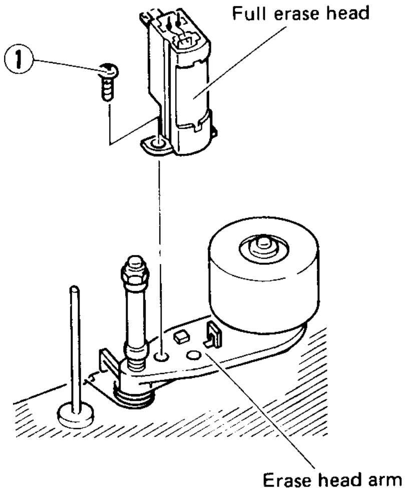
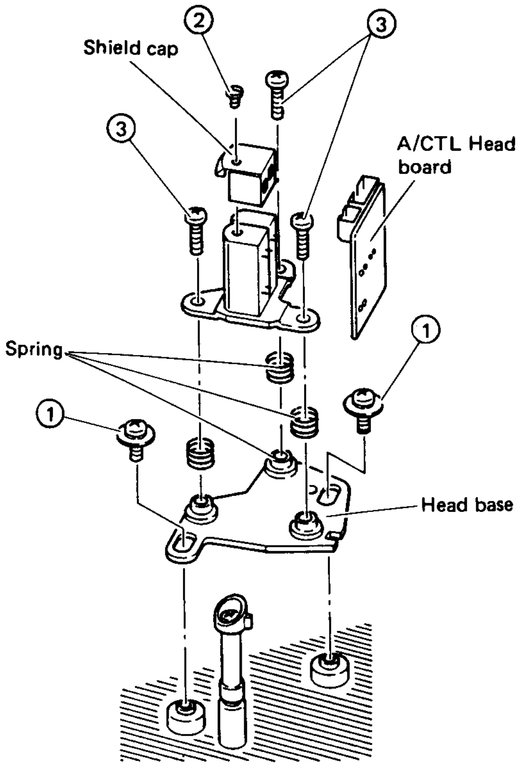


Fig. 1-3-5 Replacement of F.E. head

1.3.4 Audio/control head

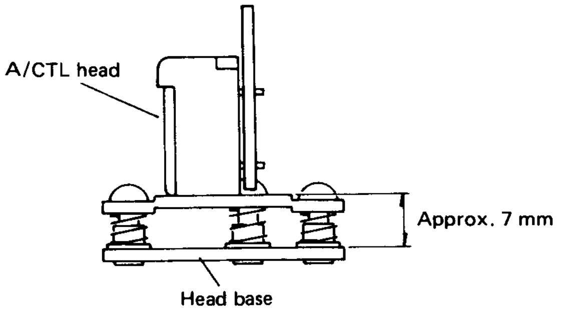
1. Disconnect connectors CN1 and CN2 from the A/CTL HEAD board.
2. Take out screws ① and remove the audio/control head with the head base.



②
③
Shield cap
③
A/CTL Head board
①
Spring
①
Head base

Fig. 1-3-6 Replacement of A/CTL head

3. Unsolder the six terminals coming from the heads and remove the A/CTL HEAD board.
4. Take out screw ② and remove the shield cap from the audio/control head.
5. Take out screws ③ to separate the audio/control head from the head base. Use care regarding springs.
6. Replace the audio/control head and reassemble by reversing the above steps.
   Before mounting on the main-deck, perform rough-adjustment of audio/control head height as shown in Fig. 1-3-7.



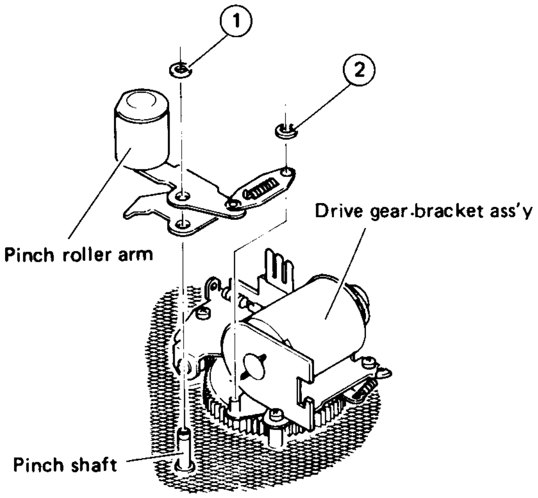
A/CTL head
Approx. 7 mm
Head base

Fig. 1-3-7 A/CTL head height

7. Perform the tape transport/interchangeability checks and adjustments (refer to sections 1.4.5 and 1.4.6).

1.3.5 Pinch roller

1. Remove the guide arm (Fig. 1-3-9) then take out slit washer ① and slit washer ②. Remove the pinch roller arm in the upward direction.
2. After cleaning the pinch shaft, spread grease on it.
3. Replace the pinch roller arm and reassemble by reversing the above steps. Avoid staining the pinch roller with grease.

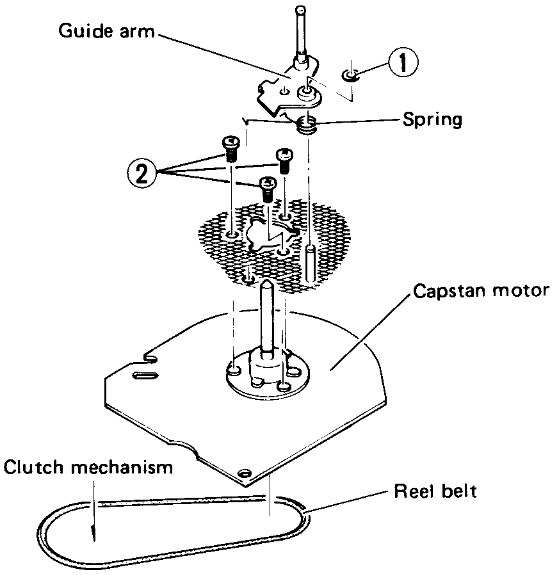


①
②
Drive gear-bracket ass'y
Pinch roller arm
Pinch shaft

Fig. 1-3-8 Replacement of pinch roller

1.3.6 Capstan motor

1. Take out slit washer ① and remove the guide arm with spring.
2. Disconnect connector CN3 from the DECK TERMINAL board.



Guide arm
①
Spring
②
Capstan motor
Clutch mechanism
Reel belt

Fig. 1-3-9 Replacement of capstan motor

3. Disengage the reel belt from the capstan motor and the pulley of the clutch mechanism assembly.
4. Take out three screws ② and remove the capstan motor in the downward direction. Use care regarding the motor brake.
5. Replace the capstan motor and reassemble by reversing the above steps.

1.3.7 Mode control motor

1. Take out screws ①, ② and ③ to free the main deck from the chassis.
2. Disengage the mode control belt from the motor pulley.
3. Disconnect connector CN1 from the MOTOR board. Take out screws ④ and ⑤, then remove the mode control motor.
4. Unsolder the mode control motor from the MOTOR board and replace.
5. Observe motor polarity (+ side upward) and reassemble by reversing the above steps.

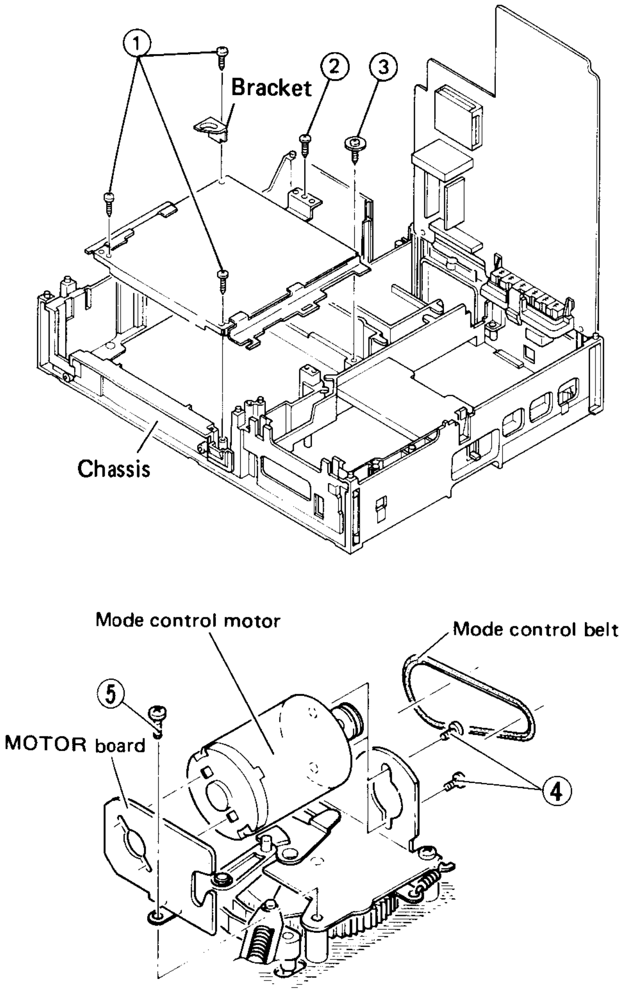


Fig. 1-3-10 Removal of mode control motor

1.3.8 Cassette motor

1. Remove the cassette housing (refer to section 1.3.1).
2. Unsolder the two wires from the cassette motor.

DISTINCTION	WIRE COLOR
Thick boss	White
Thin boss	Gray

Table 1-3-2 Cassette motor wiring

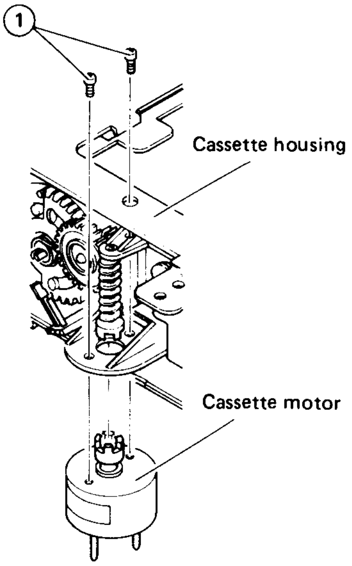


Fig. 1-3-11 Replacement of cassette motor

3. Take out two screws ① and remove the cassette motor.
4. Replace the cassette motor and reassemble by reversing the above steps. Use care regarding the motor wire polarity (refer to Table 1-3-2).
5. Reinstall the cassette housing into its original position.

1.3.9 Reel disks

- Supply reel disk

1. Take out slit washer ① and remove the supply loading brake with spring.
2. Disengage the tension band holder from the tension arm and move the tension band to the side.
3. Take out slit washer ② and remove the supply reel disk upwards. Use care regarding the washers.
4. After cleaning the reel shaft with alcohol, lubricate it with one drop of sewing machine oil. Do not over lubricate.
5. Replace the supply reel disk and reassemble by reversing the above steps.
6. Perform the back tension check (refer to section 1.4.4).

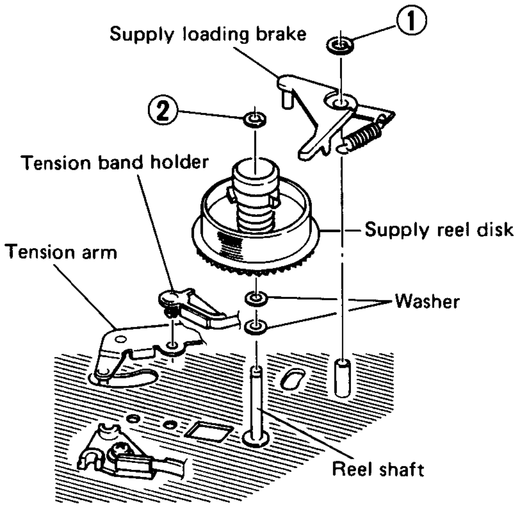

Supply loading brake
①
②
Tension band holder
Supply reel disk
Tension arm
Washer
Reel shaft

Fig. 1-3-12 Replacement of supply reel disk

- Take-up reel disk

1. Take out slit washer ① and remove the take-up reel disk upwards while moving the take-up loading brake. Use care regarding the washers.
2. After cleaning the reel shaft with alcohol, lubricate it with one drop of sewing machine oil. Do not over lubricate.
3. Replace the take-up reel disk and reassemble by reversing the above steps.

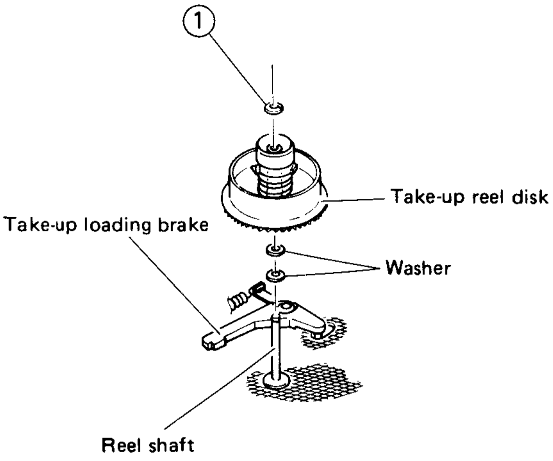

①
Take-up reel disk
Take-up loading brake
Washer
Reel shaft

Fig. 1-3-13 Replacement of take-up reel disk

1.3.10 Clutch mechanism

- Take-up and Supply clutches

1. Remove the take-up reel disk (refer to section 1.3.9).
2. Take out slit washer ①, then remove the take-up clutch while shifting the take-up main brake. Use care regarding the washer under the clutch.
3. Clean the clutch shaft with alcohol, then lubricate it with one drop of sewing machine oil. Do not over lubricate.
4. Replace the take-up clutch and reassemble by reversing the above steps.
5. In the same manner, remove the supply reel disk and replace the supply clutch.
6. Perform the take-up torque check (refer to section 1.4.3).

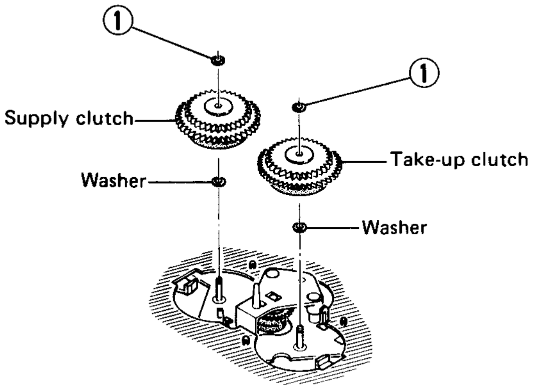

①
①
Supply clutch
Take-up clutch
Washer
Washer

Fig. 1-3-14 Replacement of clutches

- Clutch mechanism

1. Disengage the five springs from the clutch mechanism. These springs come from the supply loading brake, take-up loading brake, main brake slider, supply main brake and take-up main brake.
2. Disengage the reel belt from the pulley of the clutch mechanism.
3. Take out screw ① and remove the clutch mechanism.

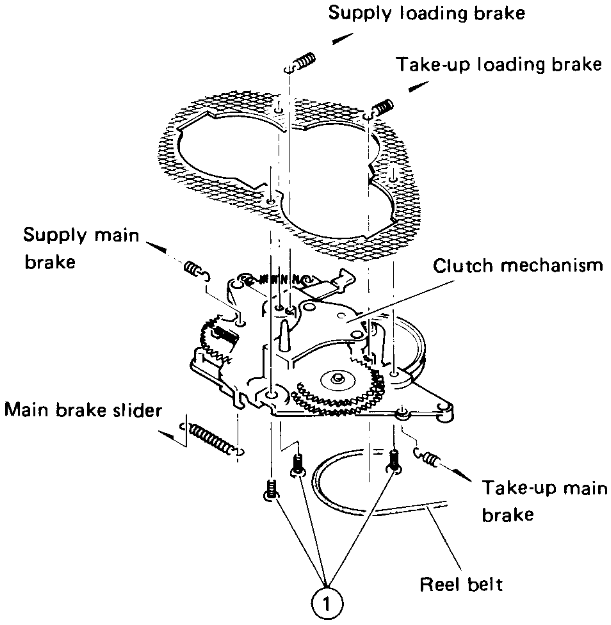

Supply loading brake
Take-up loading brake
Supply main brake
Clutch mechanism
Main brake slider
Take-up main brake
Reel belt
①

Fig. 1-3-15 Replacement of clutch mechanism

4. Replace the clutch mechanism and reassemble by reversing the above steps.

5. Perform the take-up torque check (refer to section 1-4-3.

1.3.11 Brush

1. Take out screw ① and remove the brush, and clean the commutator with alcohol.

2. Replace and install the brush as before, check that the brush contacts the center of the commutator.

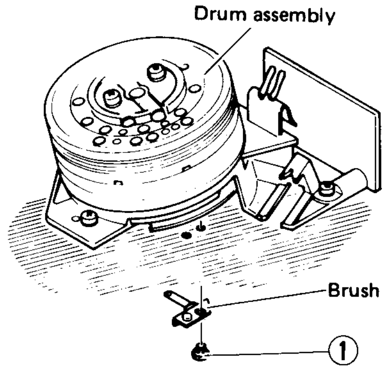


Fig. 1-3-16 Replacement of brush

1.3.12 Tension band

1. Take out slit washer ① and remove the supply loading brake with spring.

2. Take out screw ② and disengage the tension band from the tension arm, then replace the tension band.

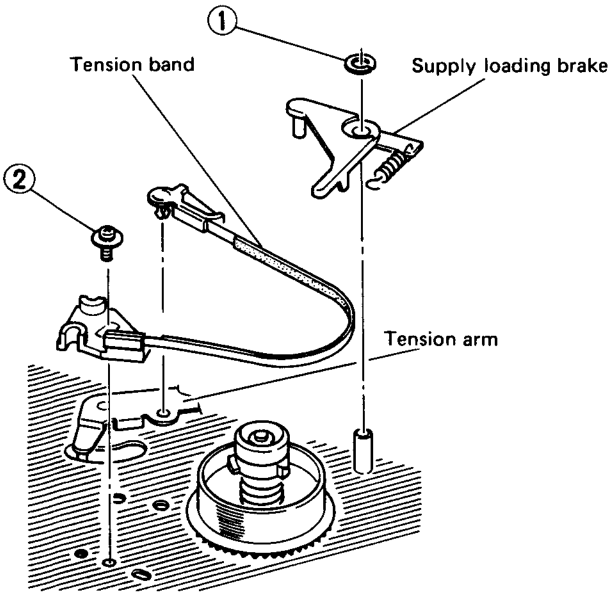


Fig. 1-3-17 Replacement of tension band

3. Reassemble the tension band by reversing the above steps.

4. Perform the tension pole position check and the back tension check (refer to sections 1.4.2 and 1.4.4).

1.3.13 Pick-up head

1. Unsolder the two wires from the terminals of the pick-up head.

2. Take out screw ① and remove the pick-up head.

3. Replace and reassemble the pick-up head by reversing the above steps. Use care regarding the wire polarity. Check that the pick-up head is toward the center position of the drum shaft.

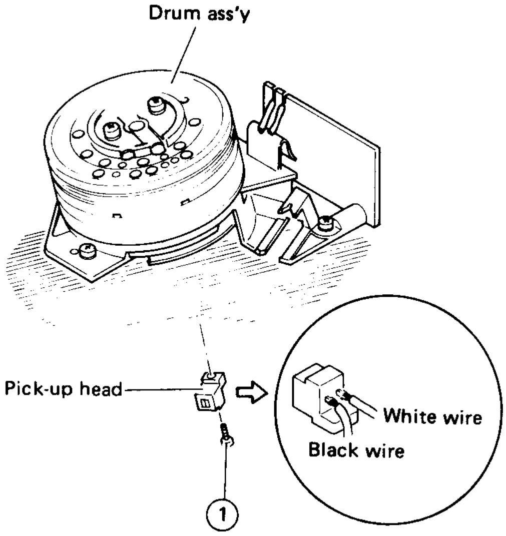


Fig. 1-3-18 Replacement of pick-up head

1.4 CHECKS AND ADJUSTMENTS

1.4.1 Mechanism timing check

- Loading rings and loading gear (2)

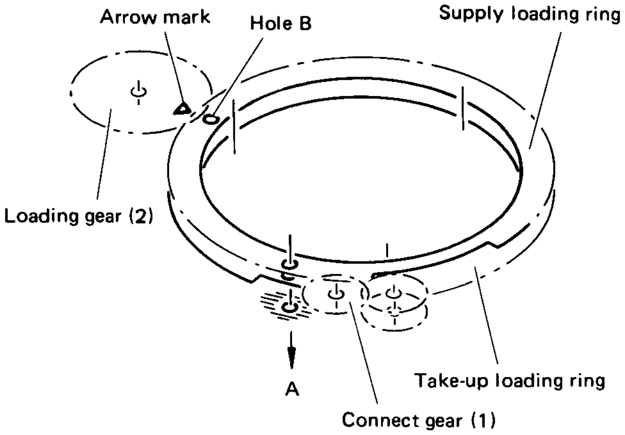


Fig. 1-4-1 Loading ring/loading gear (2)

1. Confirm that the two holes of supply and take-up loading rings are overlapped through the hole of the main-deck (arrow A in Figure). If a discrepancy is noted, after removing the connect gear (1), adjust the loading rings to obtain the correct position. Holes are overlapped in the Stop (FF/REW) mode position.
2. At the same time, confirm that the arrow mark of the loading gear (2) corresponds with hole B of the supply loading ring. If a discrepancy is noted, remove and re-install the loading gear (2) to obtain the correct position.

- Cam gear (drive gear bracket) and loading gear (1)

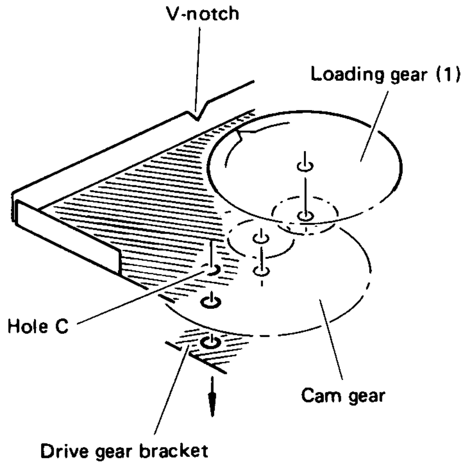


Fig. 1-4-2 Cam gear/loading gear (1)

1. When the two holes of cam gear and drive gear bracket are overlapped through the hole C of the main-deck (FF/REW mode position), confirm that the arrow indication of loading gear (1) is aligned with the V-notch of the main-deck. If a discrepancy is noted, remove and re-install the loading gear (1) to obtain the correct position.

1.4.2 Tension pole position check

1. Without loading a tape, set for the Play mode (refer to section 1.3.1).
2. Confirm that the center of the tension pole lies upon the left side of the supply guide pin bushing as shown in Fig. 1.4.3).
3. If necessary, loosen screw ① and adjust the tension band holder to obtain the correct tension pole position.

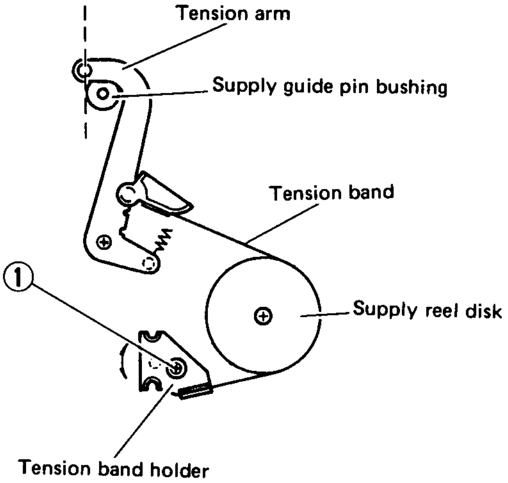


Fig. 1-4-3 Tension pole position

1.4.3 Take-up torque check

1. Set the Play mode without loading a tape (refer to section 1.3.1).
2. Set the torque gauge on the take-up reel disk.
3. The torque gauge consists of upper and lower sections connected by a spring mechanism. Relax the grip on the torque gauge so that the indicator needle and scale rotate at equal speed, then read the indication. The correct value is between 60 and 100 gf-cm.
4. If not the correct value, replace the take-up and supply clutches.

1.4.4 Back tension check

1. Use the back tension cassette gauge and set for the Play mode.
2. Confirm that the indication is between 11 and 19.
3. If not the correct value, check the tension pole position (refer to section 1.4.2) and the condition of the spring between tension arm and main-deck and replace the tension band (refer to section 1.3.12).
4. If necessary, also replace the supply reel disk (refer to section 1.3.9).

1.4.5 Tape transport system checks and adjustments

The tape transport system has been precisely aligned at the factory and normally does not require readjustment. The following check is therefore necessary only in cases of severe usage or when replacing parts affecting the tape transport system.

- Tape transport checks

1. Use a 180-minute tape and check at the tape beginning and ending portion according to the following steps.

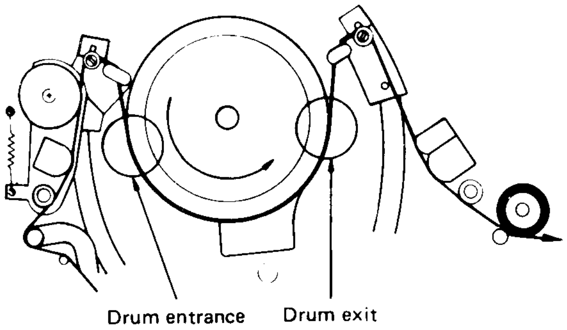
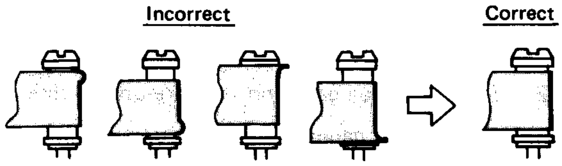
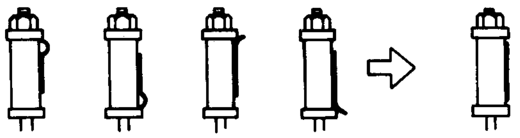


Fig. 1-4-4 Drum entrance/exit

1) During Play mode, observe tape at the entrance and exit portions of the drum lead.
   Confirm that the tape slips neither upward nor downward with respect to the lead.



(a) Guide roller



(b) Guide pole

Fig. 1-4-5 Guide roller/guide pole

2) If defects are noted during the above check, perform the guide roller height adjustment.
3) During Play mode, observe the tape at the take-up and supply guide poles and guide rollers.
   Confirm absence of curling, wrinkling, etc.
4) If defects are noted during the above check, perform the supply guide pole height and A/CTL head inclination adjustments.

2. At the ending portion of the recorded 180-minute tape, observe the tape during the Search Rev. (9 times speed) mode.
   1) Confirm absence of curling, wrinkling, slipping, etc. at the take-up guide pole.
   2) If defects are noted during the above checks, investigate the pinch roller.
3. Perform the interchangeability checks and adjustment (refer to section 1.4.6).

- Guide roller height adjustment

1. Slightly loosen setscrew under the guide roller of the pole base.
2. Use a cassette tape and set for the Play mode.
3. With a screwdriver, slightly turn the guide roller so that the tape travels smoothly in the drum lead without slipping upwards or downwards.

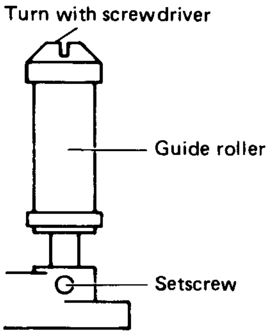


Fig. 1-4-6 Guide roller height adjustment

Notes:

1) Loosen the setscrew only enough to allow the guide roller to be turned.
   If excessively loose, tape motion may turn the roller inadvertently.
2) Turn the roller carefully to avoid damage to the tape.

- Supply guide pole height adjustment

1. Use a cassette tape and set for the Play mode.
2. Use a metric nutdriver to turn the nut to align the tape lower edge with the upper face of the supply guide pole lower flange.

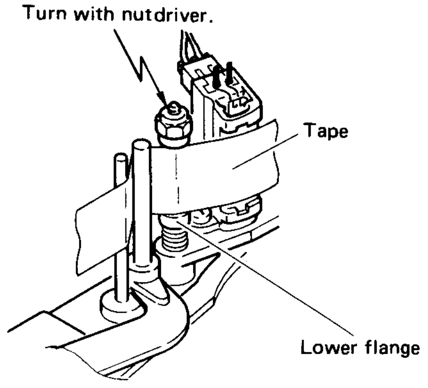


Fig. 1-4-7 Height of supply guide pole

- Audio/control head inclination

1. Use a cassette tape and set for the Play mode.
2. Turn audio/control head screw ① and align the tape lower edge with the upper face of the take-up guide pole lower flange.

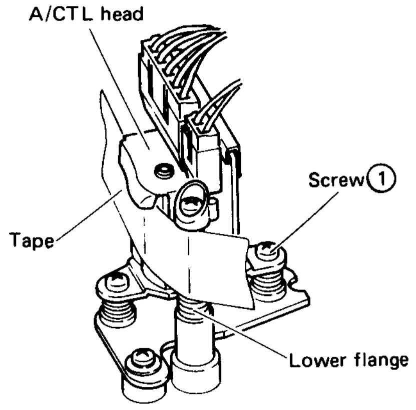


Fig. 1-4-8 Inclination of A/CTL head

Note: Take-up guide pole height is unable to be adjusted.

1.4.6 Interchangeability checks and adjustments

Before using an alignment tape, use a regular tape and confirm correct tape transport operation.

- Preliminary checks and adjustments

1. Connect an oscilloscope to TP6 (PB FM) of the V/A/F board. Trigger the oscilloscope externally with the signal from TP11 (DRUM F.F.) of the V/A/F board.
2. Play the alignment tape (stairstep signal) MH-F2.

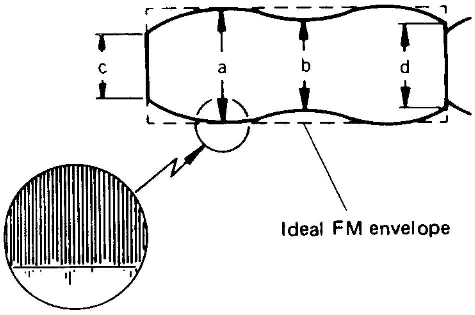


Fig. 1-4-9 FM waveform (max. output)

1) Turn the TRACKING knob to obtain the maximum FM output.
   Observe the FM waveform, read the maximum level (a) and the minimum levels (b), (c) and (d). Confirm that:

$$\frac{b}{a} \geqq 0.7, \frac{c}{a} \geqq 0.5 \text{ and } \frac{d}{a} \geqq 0.5$$

Note: If the waveform is serrated, read the value at the most uniform serrations.

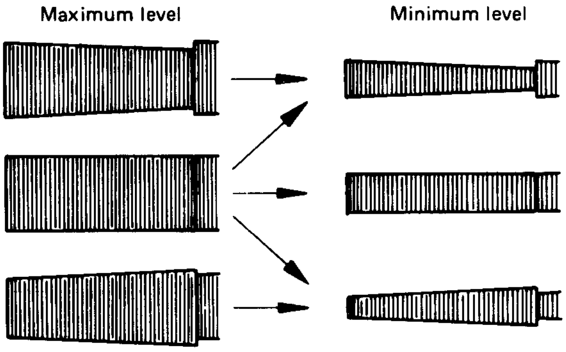


Fig. 1-4-10 Normal waveform examples

2) Turn the TRACKING knob to vary the FM output from maximum to minimum.
   Confirm that the waveform variation is nearly parallel.
3) If the above checks yield normal results, proceed to the audio/control head adjustments.
   If defects are noted, perform the following adjustments.

3. Loosen the setscrews of the supply and take-up guide rollers. If the guide rollers turn freely, slightly re-tighten the setscrews.
4. Play the alignment tape (stairstep signal) MH-2.
5. Observe the oscilloscope display and adjust the TRACKING knob for maximum FM output.

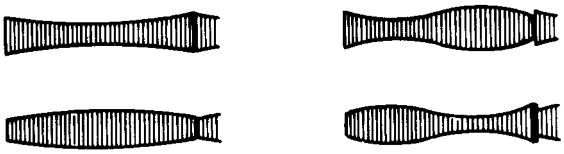


Fig. 1-4-11 Incorrect waveform examples

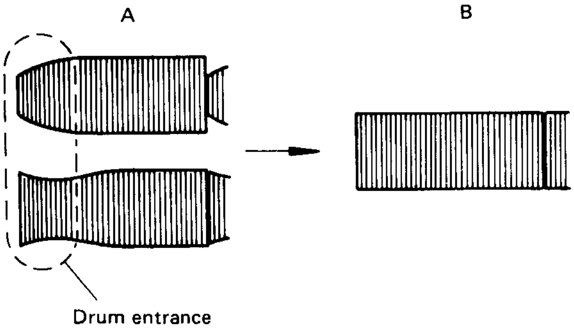


Fig. 1-4-12 Drum entrance adjustment

1) Refer to Fig. 1-4-12. Examples of incorrect waveforms are shown by A.
   Use a screwdriver to adjust the supply guide roller so that the rising portion (drum entrance) of the waveform becomes flat as shown by B.

2) In the same manner as for the drum entrance, turn the take-up guide roller to adjust the falling portion (drum exit) of the FM waveform.
Incorrect examples are shown by C in Fig. 1-4-13, while D indicates the correct adjustment.

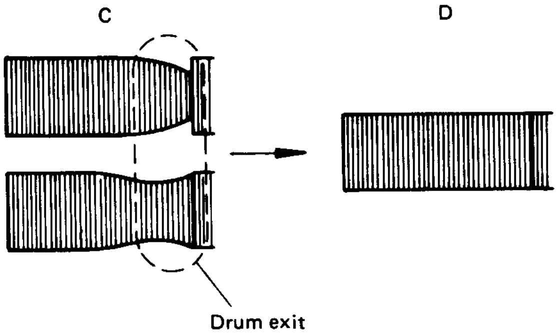


Fig. 1-4-13 Drum exit adjustment

3) In addition to observing the waveform, confirm absence of tape slippage or curling at the supply and take-up guide poles.
If the tape separates from the guide or wrinkling occurs at the supply guide pole, adjust the supply guide pole height (refer to section 1.4.5).
If at the take-up guide pole, adjust by turning the audio/control head screw (refer to section 1.4.5).

6. Observe the FM waveform and adjust the TRACKING knob for minimum FM output level.
   1) If the waveform becomes similar to A, B, C or D in Fig. 1-4-14, carefully adjust the supply and take-up guide rollers so that the waveform becomes similar to E, F or G.

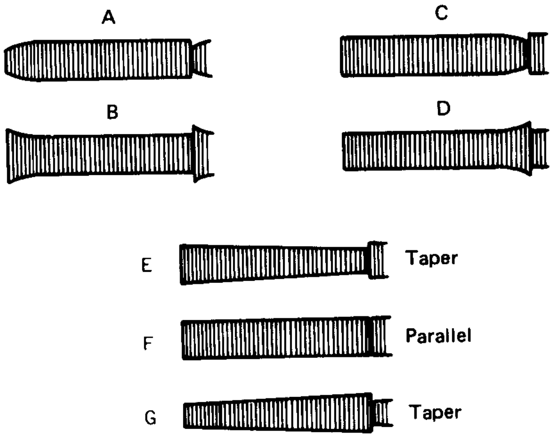


Fig. 1-4-14 Minimum FM waveform

Note: At this time, if the waveform fluctuates, adjust for minimum fluctuation.

2) Vary the FM output level and perform fine adjustment of the supply and take-up guide rollers.

- Audio/control head height and azimuth adjustments

Incorrect audio/control head height can impair audio signal-to-noise ratio when playing back a pre-recorded tape.

1. Connect an oscilloscope to the AUDIO OUT terminal of the V/A/F board.
2. Play 6 kHz segment (stairstep signal) of the alignment tape MH-2.

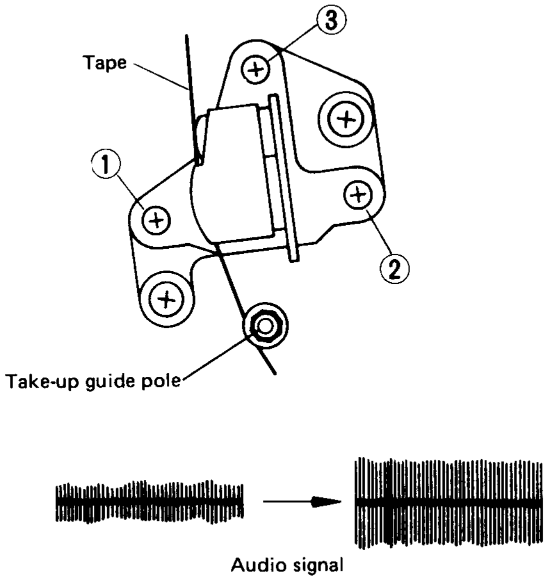


Fig. 1-4-15 Audio/Control head adjustment

1) Adjust Screw ② so that small tape wrinkles are not produced at the take-up guide pole, and azimuth with screw ③.

2) Turn screws ①, ② and ③ by small and equal increments to adjust the audio/control head height for maximum audio output.
With screw ① as reference, adjust inclination with screw ② and azimuth with screw ③.

Notes:

a) During adjustment, avoid turning reference screw ① by more than approximately 1/4 turn (this is also to avoid damaging the alignment tape).

b) After adjusting screw ②, be sure to adjust the azimuth with screw ③.

3. Repeat these adjustment steps to obtain maximum audio output with minimum level fluctuation.

- Setscrew tightening

1. After confirming absence of tape wrinkling and other transport irregularities, tighten the setscrews under the guide rollers while in the Stop mode.

   Note: Since the guide rollers are easily moved, use care when tightening.

2. Again perform the preliminary checks.

- Control head phase adjustment

1. Connect an oscilloscope to TP6 (PB FM) of the V/A/F board. Trigger the oscilloscope externally with the signal from TP11 (DRUM F.F.) of the V/A/F board.
2. Play the alignment tape (stairstep signal) MH-2.
3. Set the trigger to ⊕ slope and observe the CH-2 FM waveform.

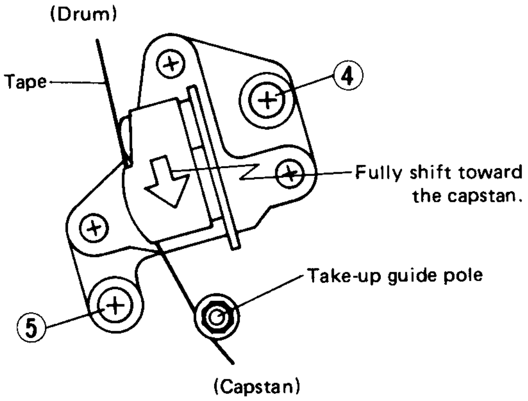


Fig. 1-4-16 Control head phase adjustment

1) Set the TRACKING knob to AUTO (center click position).
2) Loosen screws ④ and ⑤. Shift the A/CTL head assembly fully in the direction of the capstan. See Fig. 1-4-16.
3) Cover screw ④ with the A/CTL head position tool and set the pin of the tool into the hole next to screw ④.
4) While observing the FM output waveform, gradually turn the tool clockwise. Set the A/CTL head assembly to the first FM output waveform maximum point (Adjust point in Fig. 1-4-17).

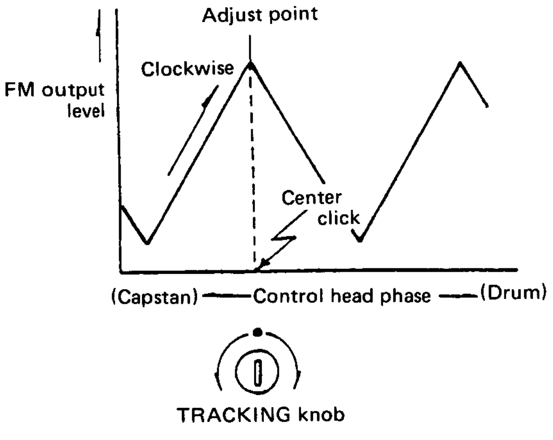


Fig. 1-4-17 CTL head phase adjustment

- Final checks

1. Connect an oscilloscope to TP6 (PB FM) of the V/A/F board. Trigger the oscilloscope externally with the signal from TP11 (DRUM F.F.) of the V/A/F board.
   1) Play the alignment tape MH-2 (stairstep signal). Confirm that the FM waveform satisfies the specifications during playback of MH-2 (refer to Fig. 1-4-9).
   2) Supply a video signal and perform recording, then playback. Confirm that the FM waveform also satisfies the specification during playback of alignment tape MH-2.
2. Connect an oscilloscope to TP6 (PB FM) of the PRE/MDA board. Trigger the oscilloscope externally with the signal from TP11 (DRUM F.F.) of the V/A/F board.
   1) Play the alignment tape (stairstep signal) MH-F2.
   2) Turn the TRACKING knob to obtain the maximum audio FM waveform.

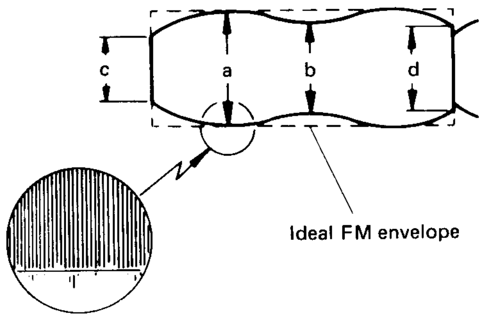


Fig. 1-4-18 FM waveform (max. output)

   3) When the audio FM waveform is as shown in Fig. 1-4-18, confirm that:

$$\frac{b}{a} \geqq 0.8,\ \frac{c}{a} \geqq 0.6,\ \frac{d}{a} \geqq 0.6$$

   4) Without an audio signal, perform recording in the SP mode, then playback. Confirm the audio FM waveform satisfies the specifications during playback of alignment tape MH-F2.
3. Perform overall checks and adjustments of the servo circuit (refer to section 2.4 and the video circuit (refer to section 2.5).
4. Perform the audio circuit and FM audio circuit adjustments (refer to sections 2.6 and 2.7).

SECTION 2
ELECTRICAL ADJUSTMENTS

2.1 PREPARATION

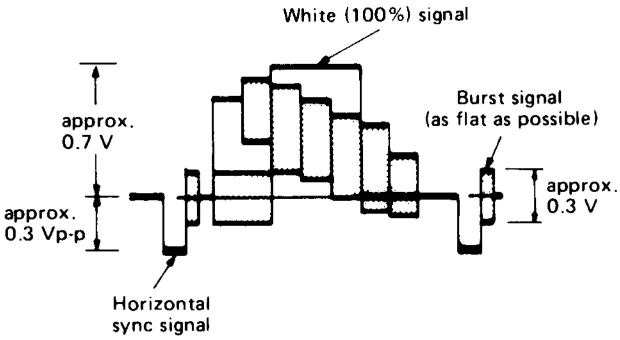
Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

2.1.1 CAUTIONS DURING SERVICE

1. In the following situations, be sure to press the INITIAL button.
    1) After replacing parts or performing other service.
    2) After the VPS board has been removed, then reinstalled.
    3) During timer operation or incorrect indication, after disconnecting the power cord, then pressing the INITIAL button continuously for more than ten seconds. In this case, again press the INITIAL button.
2. Timer parts replacement
    1) Disconnect the BACK UP board from the connector before replacing parts of the timer section.
    2) WARNING: The removed BACK UP board is hazardous. Use care not to short circuit it.
3. INITIAL button
    1) The timer of this model includes a one year back up function.
    In event of CPU misoperation, simply disconnecting and reconnecting the AC plug will not restore normal operation.
    2) The INITIAL button is provided for restoring normal operation after performing field service.

2.1.2 REQUIRED TEST EQUIPMENT

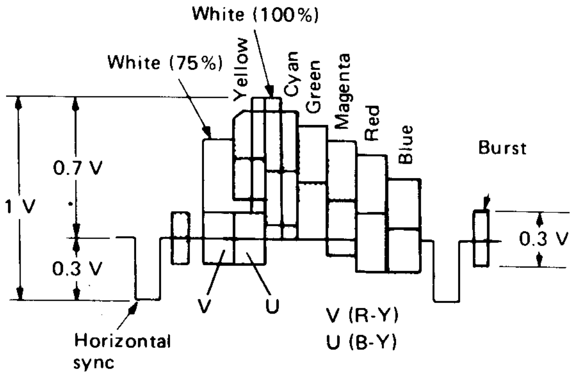
1. Colour television or monitor
2. Oscilloscope: Wide-band, dual-trace, triggered delayed sweep
3. Frequency counter
4. Audio oscillator
5. Audio voltmeter
6. Digital voltmeter
7. Signal generator: RF/IF sweep/marker
8. Signal generator: PAL colour bar, stairsteps



White (100%) signal
Burst signal
(as flat as possible)
approx.
0.7 V
approx.
0.3 V
approx.
0.3 Vp-p
Horizontal
sync signal

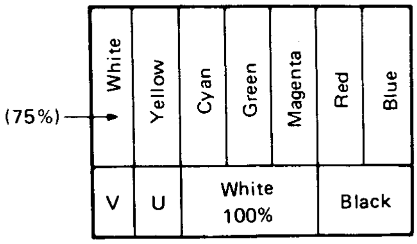
Colour bar signal of pattern generator
Fig. 2-1-1

9. Alignment tape : MH2
10. Recording cassette



White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Blue
Burst
0.7 V
1 V
0.3 V
0.3 V
V
U
V (R-Y)
U (B-Y)
Horizontal
sync

Colour bar signal waveform
Fig. 2-1-2



(75%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
V
U
White
100%
Black

Colour bar pattern
Fig. 2-1-3

2.1.3 JVC Alignment Tape Contents

1. MH-2 (Standard Play) contents

Segment	Playback Time	Video Signal	Audio Signal	Applications
1	10 minutes	Stairsteps	7 kHz	• Interchangeability checks and adjustments • Servo circuit checks and adjustments • Audio head azimuth adjustments
2	5 minutes	(none)	3 kHz	• Tape speed checks • Wow and flutter checks
3	10 minutes	Colour bars	1 kHz	• Video signal playback circuit checks and adjustments • Audio signal playback circuit checks and adjustments
4	3 minutes	RF sweep	(none)	• Video head resonance adjustments • Markers: 2.0, 4.0, 5.0 MHz

Table 2-1-1

2. MH-F2 (FM Audio) contents

Note: Audio signal should be used for FM audio only.

Segment	Playback Time	Video Signal	Audio Signal	Applications
1	5 minutes	Stairsteps	Carrier only	• Interchangeability checks for video and audio
2	5 minutes	Stairsteps	1 kHz (±50 KHz DEV.)	• FM audio signal playback circuit checks and adjustments

Table 2-1-2

2.2 REGULATOR CIRCUIT ($\boxed{0}\boxed{1}$ REGULATOR board)

Note: Unless otherwise specified, test points and variable resistors are located on the REGULATOR board.

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
1	9 V DC Output Voltage	TP1 TP GND	R21	• REC • TUNER mode	1. Connect the digital voltmeter to TP1. 2. Adjust R21 for 9.30±0.1 V.
2	5 V DC Output Voltage	TP2 TP GND	R15	• REC • TUNER mode	1. Connect the digital voltmeter to TP2. 2. Adjust R15 for 5.35±0.05 V. **Note:** Perform 5 V DC adjustment after completing 9 V DC adjustment.

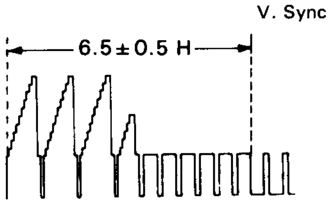
2.3 TIMER CIRCUIT ($\boxed{0}\boxed{3}$ T/S/M (TIMER) board)

Note: Unless otherwise specified, test points and variable resistors are located on the T/S/M board.

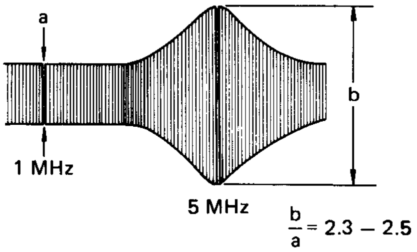
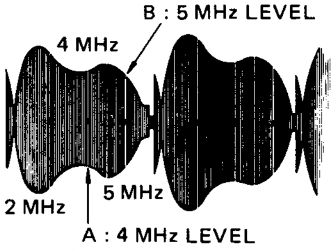
No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
1	Timer Clock	TP3	C104	• E-E	1. Connect the frequency counter to TP5. 2. Short TP2 (GND) and TP4 (TEST). Then short the cathode of D5, D10 or D4 once in order to reset IC1. 3. Adjust period T with C104 so that: T = 0.999995 ± 0.000001 sec. **Notes:** 1) Resetting IC1 while TP2 and TP4 are shorted provides the TEST mode. 2) During the TEST mode, all fluorescent display panel segments flash and 0.999995 Hz is obtained from TP5 (1 Hz OUT).

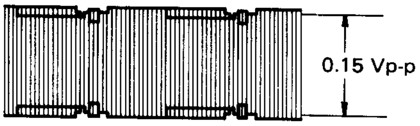
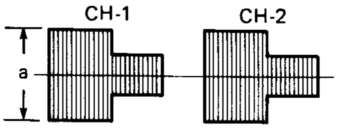
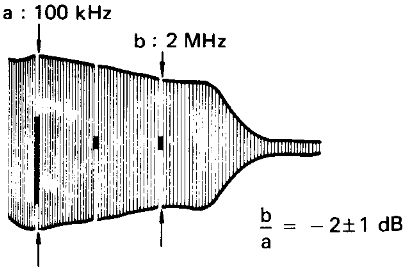
2.4 SERVO CIRCUIT (03 T/S/M (SERVO) board)

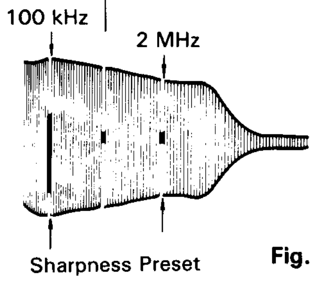
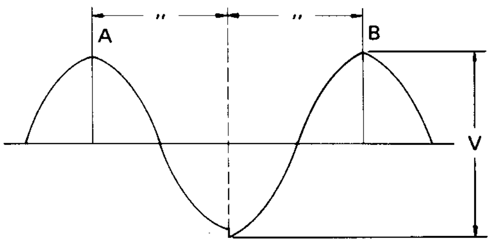
Note: Unless otherwise specified, test points and variable resistors are located on the T/S/M board.

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
1	PB Switching Point	VIDEO OUT or TP10 on the V/A/FMA	R71 (CH-1) on the V/A/FMA board	• PB • MH-2 Stairsteps • Trigger slope (−)	1 . Connect at oscilloscope to VIDEO OUT or TP10 of the V/A/FMA board. 2 . Play back the stairsteps segment of MH-1 alignment tape. 3 . Trigger the oscilloscope externally (− slope) with the signal from TP11 (DRUM FF) of the V/A/FMA board. 4 . Adjust R71 to position the trigger point 6.5 ± 0.5 H from V. sync.  Fig. 2-3-1
2	V. Pulse Position	• MONITOR • VIDEO OUT	R445	• Still (PB) • REC then PB • Colour bar	1 . Record and play back a color bar. Set for the Still mode, observe the monitor and adjust R445 for the minimum vertical jitter.

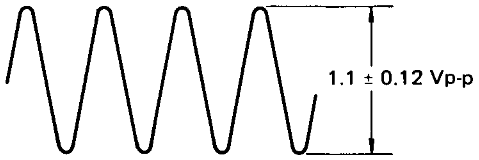
2.5 VIDEO CIRCUIT ($\boxed{0}\boxed{2}$ V/A/FMA board)

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
1	Video Head Resonance, Q (Quality Factor) Method A	TP23 (CH-1 REC CURRENT) TP26 (PB ENV)	C1 (CH-1 fo) R16 (CH-1 Q)	• RF Sweep • PB	1. Set for the playback mode without a tape. (Refer to mechanical adjustment 2.3.1). 2. Connect the oscilloscope to TP26. 3. Apply the sweep signal from a video sweep generator to TP23. Then adjust the sweep gain so that the waveform does not distort at TP26. 4. At TP26 adjust C1 for maximum level at the 5.0 MHz marker position. 5. Adjust R16 so that the 5.0 MHz level becomes 2.5 times the 1.0 MHz.  **Fig. 2-5-1**
		TP24 (CH-2 REC CURRENT)	C2 (CH-2 fo) R17 (CH-2 Q)		6. In the same manner, adjust C2 and R17 for CH-2.
	Method B	 **Fig. 2-5-2**		• MH-2 RF Sweep • PB $\frac{B}{A} = 1 - 1.1$	1. Playback RF sweep segment of the MH-2 alignment tape. 2. Connect the oscilloscope to TP6. 3. Trigger the oscilloscope externally with the signal from TP11. 4. Use (−) trigger for CH-1 and (+) trigger for CH-2. 5. Turn R16 fully counterclockwise and R17 fully clockwise not to damp. 6. Adjust C1 to set the CH-1 resonance point to 5.0 MHz and C2 to set the CH-2 resonance point 5.0 MHz. 7. Adjust R16 so that the level of 5 MHz becomes greater than 4 MHz level by 1 dB. 8. In the same manner, adjust R17 for CH-2. 9. If the level of CH-1 and CH-2 differ, adjust the higher level channel to match the lower by setting R16 and R17.
2	VXO	TP106 (fsc 4.433 MHz)	R117 (VXO 4.433 MHz)	• MH-2 Colour bar • PB or • TV signal (colour) • REC→PB	1. connect a frequency counter to TP106. 2. Playback the pre recorded tape or alignment tape. 3. Adjust R117 for 4.433619 MHz±50 Hz.

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
3	REC FM level	TP22 (REC FM)	R48 (REC FM ADJ)	• Colour bar • REC	1. Supply a colour bar input signal. 2. Connect an oscilloscope to TP22. 3. Adjust R48 so that the pedestal level of the vertical blanking component becomes 0.12 Vp-p.  **Fig. 2-5-3**
4	REC colour level	TP104 (PB COL)	R111 (REC COL ADJ)	• MH-2 colour bar • PB • Colour bar • REC → PB	1. Connect an oscilloscope to TP104. 2. Trigger the oscilloscope externally (— slope) with the signal from TP11. 3. Playback the alignment tape colour bar segment, then measure the colour level (CH-1). Make a note of this as level "a". 4. Supply a colour bar signal, record, then playback. 5. During recording, adjust R111 so that the colour level of CH-1 becomes 110 ±5% of the level "a". **Note:** Playback the alignment tape, then playback a self-recorded tape and confirm the absence of colour level reversal between channels.  **Fig. 2-5-4**
5	P.B. Frequency response	TP10 (VIDEO OUT)	R27 (RF EQ)	• Colour bar • REC → PB	1. Connect an oscilloscope to TP10. 2. Set the sharpness control to center click position. 3. Record and playback a video sweep (with sync) signal. 4. Adjust R27 so that the 2 MHz level become −2±1 dB (79—96%) with reference to 100 kHz.  **Fig. 2-5-5**

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
6	Sharpness Preset	Pin 24 of IC2 Pin 5 of IC2	R81 (SHARP-NESS PRESET)  Fig. 2-5-6	Video sweep REC ↓ PB	1. Connect an oscilloscope to pin 24 of IC2 and pin 5 of IC2 of the V/A/F board. 2. Set the Sharpness control to the center click position. 3. Record and play back a video sweep (with sync) signal. 4. Adjust R81 so that the 2 MHz level of pin 24 equals the 2 MHz level of pin 5.
7	SECAM DET (*E/EG Model)	TP110 (S DET ADJ)	L108 (1/2 fH TUNING) R137 (S DET ADJ)	• SECAM colour bar • E-E • REC → PB	1. Connect an oscilloscope to TP110. 2. Adjust L108 so that transition step becomes centered between "A" and "B" as shown in Fig. 2-5-7.  Set this point to center position between points "A" and "B". V = more than 5.5 Vp-p in REC V = 6.5 ±0.5 Vp-p in PB Fig. 2-5-7 3. Record then playback. 4. Adjust R137 for 6.5 ±0.5 Vp-p.

2.6 AUDIO CIRCUIT ($\boxed{0}\boxed{2}$ V/A/FMA board)

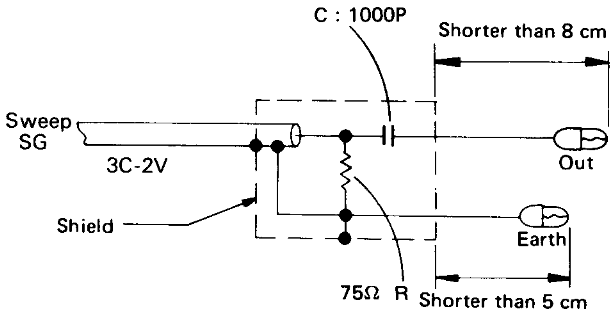
No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
1	Audio Bias level	TP402 (BIAS LEVEL) TP403 (GND)	R434 (BIAS LEVEL)	• REC	1. Connect a digital voltmeter between TR402 and TP403 (GND). 2. Set for the REC mode without signal. 3. Adjust R434 for 2.6±0.2 mVrms.
2	Audio PB level	AUDIO OUT	R423 (PB LEVEL)	• Colour bar signal • Audio signal (RCA IN) −20 dBs/1 kHz • REC → PB	1. Connect an oscilloscope to AUDIO OUT. 2. Record and playback a video signal and an audio signal. 3. Adjust R423 for −6±1 dBs (1.1±0.12 Vp-p) at AUDIO OUT.  Fig. 2-6-1

2.7 FM AUDIO CIRCUIT ($\boxed{0}\boxed{2}$ V/A/FMA (FM AUDIO) board)

Note: Unless otherwise specified test points and variable resistors are located on the V/A/FMA board.

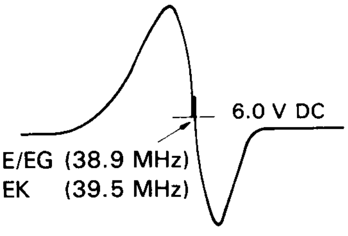
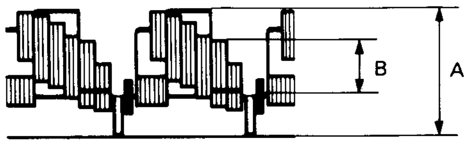
No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
1	E-E Level	AUDIO OUT	R247 (E-E CH1/L)	• AUX mode • 1 kHz −20 dBs • AUDIO LIMITER to on • E-E (STOP)	1. Set the SOURCE SELECT switch to the AUX position. 2. Set the AUDIO LIMITER switch to on. In the STOP (E-E) mode, adjust R247 to obtain −6 ± 0.5 dBs at AUDIO OUT.
			R250 (E-E CH2/R)		3. In the same manner, adjust R250 for the R (CH2) channel.
2	REC FM Level	TP201 (REC FM)	R228 (REC FM LEVEL)	• AUX mode • Without signal • REC	1. Without supplying an input signal, set the SOURCE SELECT switch to the AUX position. 2. In the REC mode, adjust R228 for 2.2 Vp-p FM waveform envelope at TP201.
3	PB Level	AUDIO OUT	R236 (PB CH1/L)	• PB mode • MH-F2 1 kHz ±50 kHz Deviation • AUDIO OUT SW to HiFi • MONITOR SW to STEREO	1. Play back a segment (1 kHz ±50 kHz deviation) of the MH-F2 alignment tape. 2. Adjust R236 to obtain −9±0.5 dBs during playback.
			R235 (PB CH2/R)		3. In the same manner, adjust R235 for the R (CH2) channel.
4	Level Indicator	FDP (Level Ind.)	R289 (INDICATOR CH1/L)	• AUX mode • 1 kHz, −8 dBs • AUDIO LIMITER to off • E-E (STOP)	1. Set the SOURCE SELECT switch to the AUX position. Supply a 1 kHz −8 dBs audio signal via AUDIO IN. 2. Set the AUDIO LIMITER switch to off. In the E-E (STOP) mode, adjust Hi-Fi REC LEVEL L and R for −6 ± 0.5 dBs for both L (CH1) and R (CH2). 3. Adjust R289 to where the level indicators show 0 dB (all green LEDs light).
			R290 (INDICATOR CH2/R)		4. In the same manner, adjust R290 for the R (CH2) channel.
5	NR OFFSET	Pin 29 of IC206	R267 (L OFFSET)	STOP (E-E)	1. In the STOP (E-E) mode, measure Vcc (pin 18 of IC206) with a digital voltmeter. 2. Adjust R267 to obtain Vcc/2 at IC206 pin 29.
		Pin 2 of IC206	R268 (R OFFSET)		3. In the same manner, adjust R268 for Vcc/2 at IC206 pin 2 for the R (CH2) channel.

2.8 TUNER/IF CIRCUIT ($\boxed{0}\boxed{4}$ TU/IF board)

<table>
<tr><th>No.</th><th>Item</th><th>Check Point</th><th>Adjustment Parts</th><th>Signal & Mode</th><th>Description and Waveform</th></tr>
<tr><td colspan="6">Unless otherwise indicated, all test points and adjustments are located on the TUNER/IF board.
Equipment required
1. Oscilloscope
2. IF sweep signal generator with suitable markers (PIF, SIF, etc.)
3. DC power supplies — For power bias (12.0 V)
— For IF AGC bias (approx. 5 V variable)
4. Sweeper probe (sweep signal supply cable) as shown below.


C : 1000P
Shorter than 8 cm
Sweep SG
3C-2V
Out
Shield
Earth
75Ω R
Shorter than 5 cm

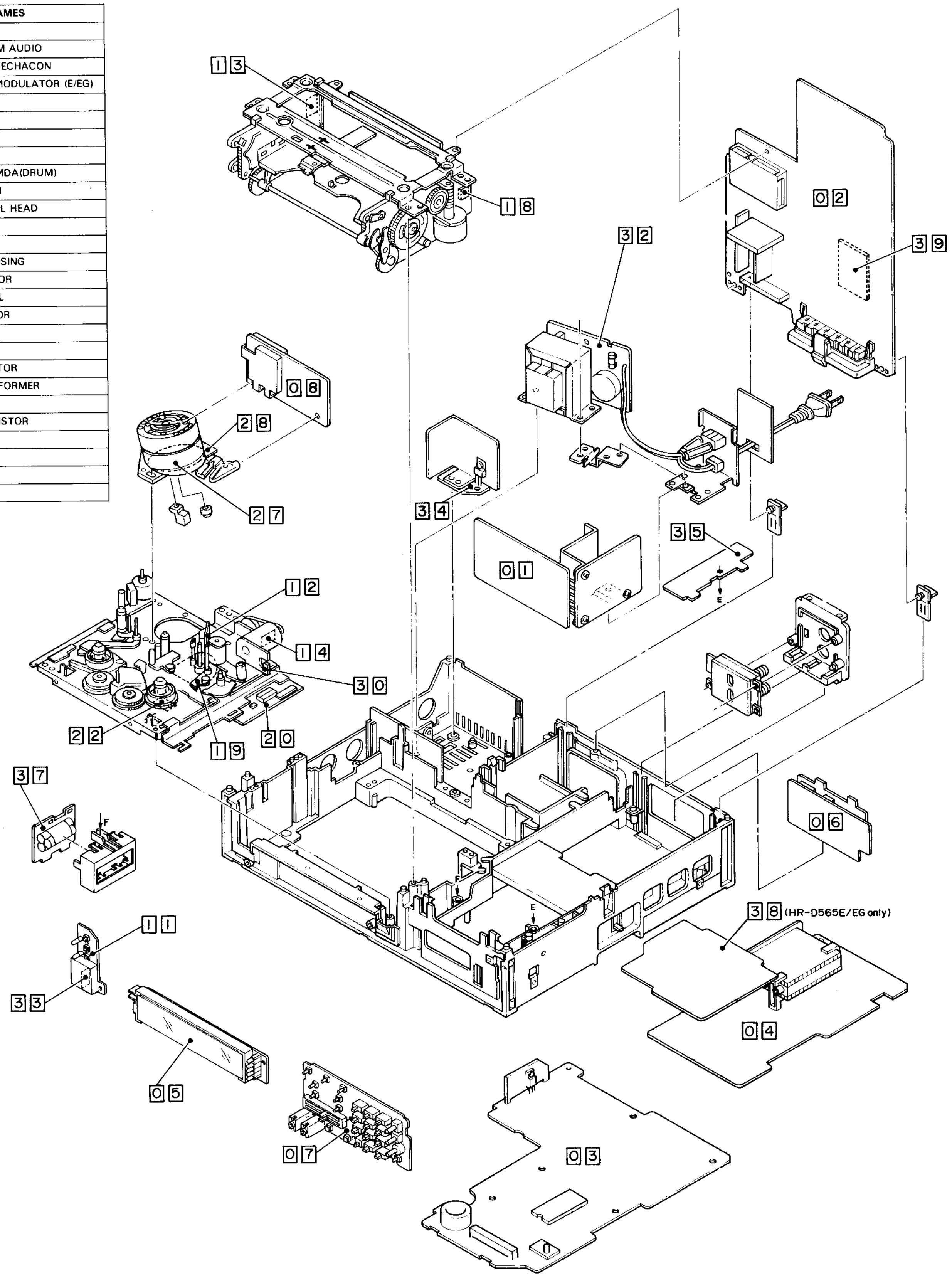
Sweeper probe
Fig. 2-8-1</td></tr>
<tr><td>1</td><td>LLD Coil</td><td>TP12 (V. DET. OUT)</td><td>T3 (LLD)</td><td>Sweep generator
E/EG (38.9 MHz)
EK (39.5 MHz)</td><td>1. Connect the sweep generator out probe to pin 9 of IC1 (M51316BP).
2. Adjust the sweep gain so that the waveform does not distort as observed with the oscilloscope. (approx 25 mVrms)
Connect a DC power supply to TP14 (AGC)
Adjust AGC bias for 1 Vp-p TP12 (V. DET OUT).
3. Adjust T3 (LLD coil) so that video IF carrier E/EG: (38.9 MHz), EK: (39.5 MHz) marker becomes maximum level.</td></tr>
<tr><td>2</td><td>S. TRAP Coil</td><td>TP12 (V. DET OUT)</td><td>T1 (S. TRAP)</td><td>Sweep generator
E/EG (33.4 MHz)
EK (33.5 MHz)</td><td>1. In the same manner as above item 1, connect the sweep generator and power supplies.
2. Adjust T1 (S. trap coil) so that sound IF carrier E/EG: (33.4 MHz), EK: (33.5 MHz) marker becomes minimize level.</td></tr>
<tr><td>3</td><td>IF Coil</td><td>TP12 (V. DET. OUT)</td><td>IF Coil (Inside the tuner unit.)</td><td>Sweep generator
E/EG (38.15 MHz)
EK (38.25 MHz)</td><td>1. Connect the sweep generator out probe to test point inside the tuner unit.
2. Sweep level and power supplies are the same manner as item 1.
3. Adjust IF coil (inside the tuner unit) so that E/EG: (38.15 MHz), EK: (38.25 MHz) marker becomes maximum level.</td></tr>
</table>

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description and Waveform
4	AFC Coil	Pin 24 of IC1 (M51316BP)	T2 (AFC COIL)	Sweep generator E/EG (38.9 MHz) EK (39.5 MHz)  **Fig. 2-8-2**	1. Set AFC SW to ON and sweep generator to 8.5 mVrms. 2. Connect the oscilloscope to pin 24 of IC1. 3. Connect a DC power supply to pin 3 of IC3 and adjust the DC power supply to obtain 2.2 V DC at pin 3. (E/EG only) 4. Adjust the sweep gain so that the "S" curve appears as observed with the oscilloscope. Adjust AGC bias so that the "S" curve does not distort. 5. Adjust T2 (AFC) so that video IF carrier E/EG: (38.9 MHz), EK: (39.5 MHz) becomes 6.0 V DC as shown in figure.
5	Adjacent Trap (E/EG only)	TP12 (V DET OUT)	T5 (ADJACENT TRAP)	IF sweep	1. Connect an IF sweep generator to the test point in the front end. 2. 32.4 MHz signal that is modulated at 400 Hz is supplied to test point in the front end. 3. Adjust T5 so that the waveform level at TP12 becomes minimum.
6	AGC	IF end (at the tuner unit)	R10 (AGC)	Colour bar TV channel signal genertor	1. Supply a colour bar signal of VHF channel E/EG: E-7, EK: I-55 from a TV channel signal generator and select the channel corresponding to the generator. 2. Adjust R10 so that IF end level of the tuner unit becomes maximum. 3. Readjust R10 so that the level becomes − 10 dB with reference to the previous measured level.
7	VPS Y Level (E/EG only)	TP13 (VPS)	R39 (Y Level)	Colour bar TV channel signal generator	1. Supply a colour bar signal of VHF channel E/EG: E-7, EK: I-55 from a TV channel signal generator (87.5% modulation) and select the channel corresponding to the generator. 2. Adjust R124 for 2.3±0.1 Vp-p at TP13.
8	Colour Level	TP13B (VIDEO)	R32 (COLOUR LEVEL)	Colour bar TV channel signal generator	1. Supply a colour bar signal of VHF channel E/EG: E-7, EK: I-55 from a TV channel signal generator and select the channel corresponding to the generator. 2. Adjust R32 to satisfy the figure at TP13B.  B: magenta E/EG A:B = 1:0.44 EK A:B = 1:0.48 **Fig. 2-8-3**
9	AUDIO Level	TP12 (AUDIO OUT)	R40 (AUDIO LEVEL)	Colour bar TV channel signal generator	1. Supply a video signal and 1 kHz audio RF signal of VHF channel 7 from a TV channel signal generator and select the channel corresponding to the generator. 2. Adjust R40 for − 14 dBs (0.44 Vp-p) at TP12.

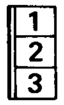
SECTION 3
CHARTS AND DIAGRAMS

3.1 CIRCUIT BOARD LOCATIONS

No.	NAMES
01	REGULATOR
02	VIDEO/AUDIO/FM AUDIO
03	TIMER/SERVO/MECHACON
04	TUNER/IF & DEMODULATOR (E/EG)
04	TUNER/IF (EK)
05	DISPLAY
06	TERMINAL
07	SWITCH
08	PREAMP(FMA)/MDA(DRUM)
11	POWER SWITCH
12	AUDIO/CONTROL HEAD
13	END SENSOR
14	MODE SENSOR
18	CASSETTE HOUSING
19	CAPSTAN MOTOR
20	DECK TERMINAL
22	TAKE-UP SENSOR
27	DRUM FG
28	DRUM MOTOR
30	MODE CTL MOTOR
32	POWER TRANSFORMER
33	INFRARED
34	POWER TRANSISTOR
35	PRESETTER
37	BACK UP
38	VPS (E/EG only)
39	MIC

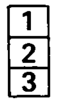


1. Connections

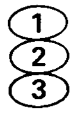


: Connector

: Board



: Board in connector

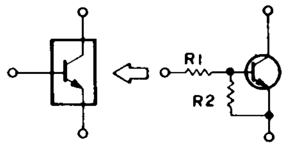


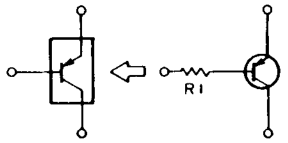
: Connected pattern in the board.

2. Indications

COUNT UP	: Active only at high.
COUNT DOWN	: Active only at low.

3. Digital transistor





DTA114T T mark only

Note:
The digital transistor includes built in resistors.
It features small size and high reliability.
Both PNP and NPN types are available.

Uses:
Inverter, Interface, driver circuits.

4. Schematic diagram values

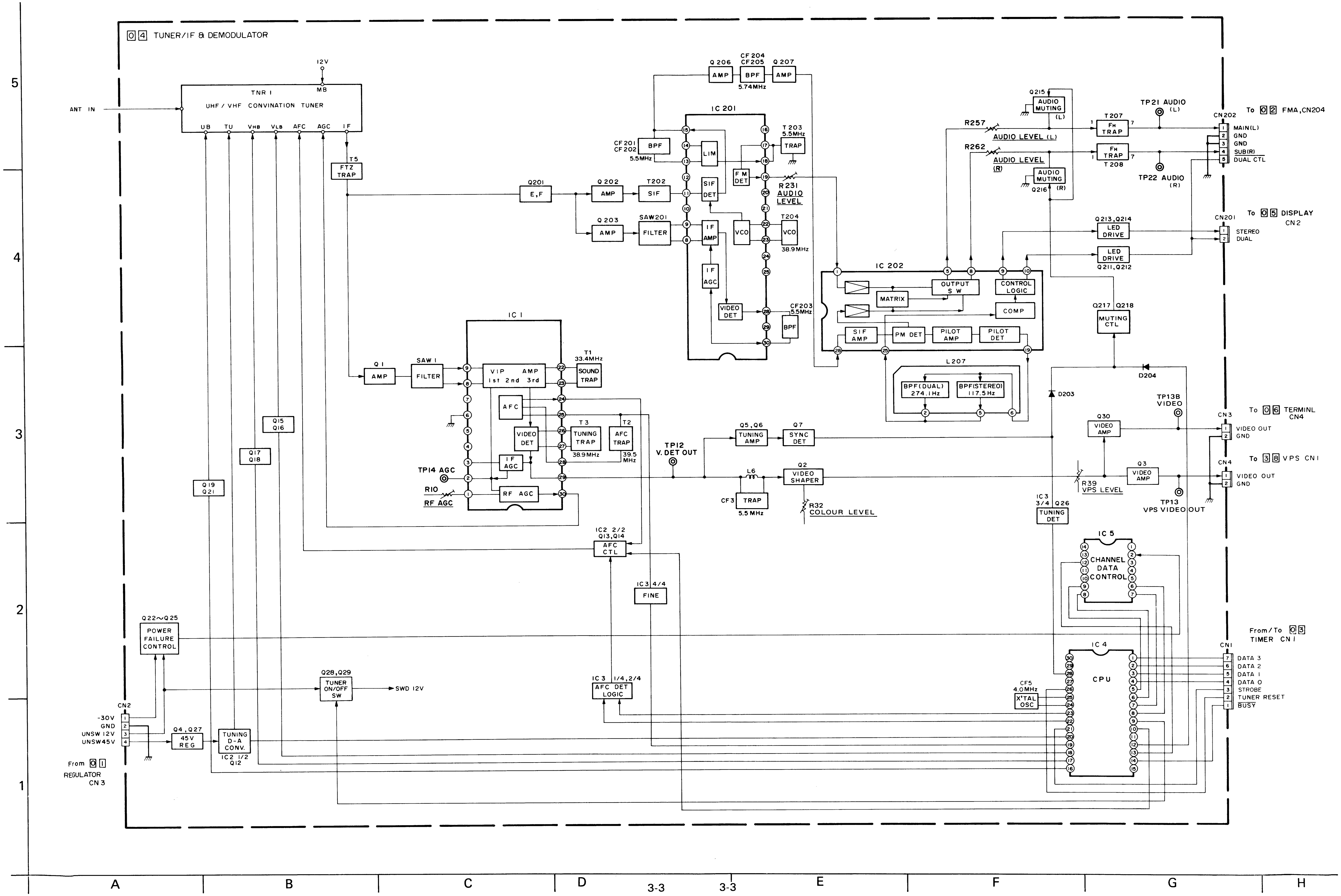
Unless otherwise specified,

1. All resistance values are in ohms, 1/6 W, 1/8 W, (refer to parts list).
2. All capacitance values are in μF, (P,PF).
3. All inductance values are in μH, (m;mH).
4. All diodes are 1SS133 or MA165, MA150 (refer to parts list).
5. Voltages are DC-measured with a digital voltmeter during recording (SP mode) and playback (SP mode) with alignment tape. Where voltages differ between recording and playback, the voltage during recording is shown in parentheses.
6. Waveforms (VIDEO System) are measured with a color bar during recording (SP mode) and playback (SP mode) with alignment tape.
7. Waveforms (AUDIO System) are measured with 1 kHz (−8 dBs) during recording and playback with alignment tape (1 kHz).
8. Shaded ( ) parts are critical for safety.
   Replace only with specified parts numbers.

3.2 KEY TO ABBREVIATIONS

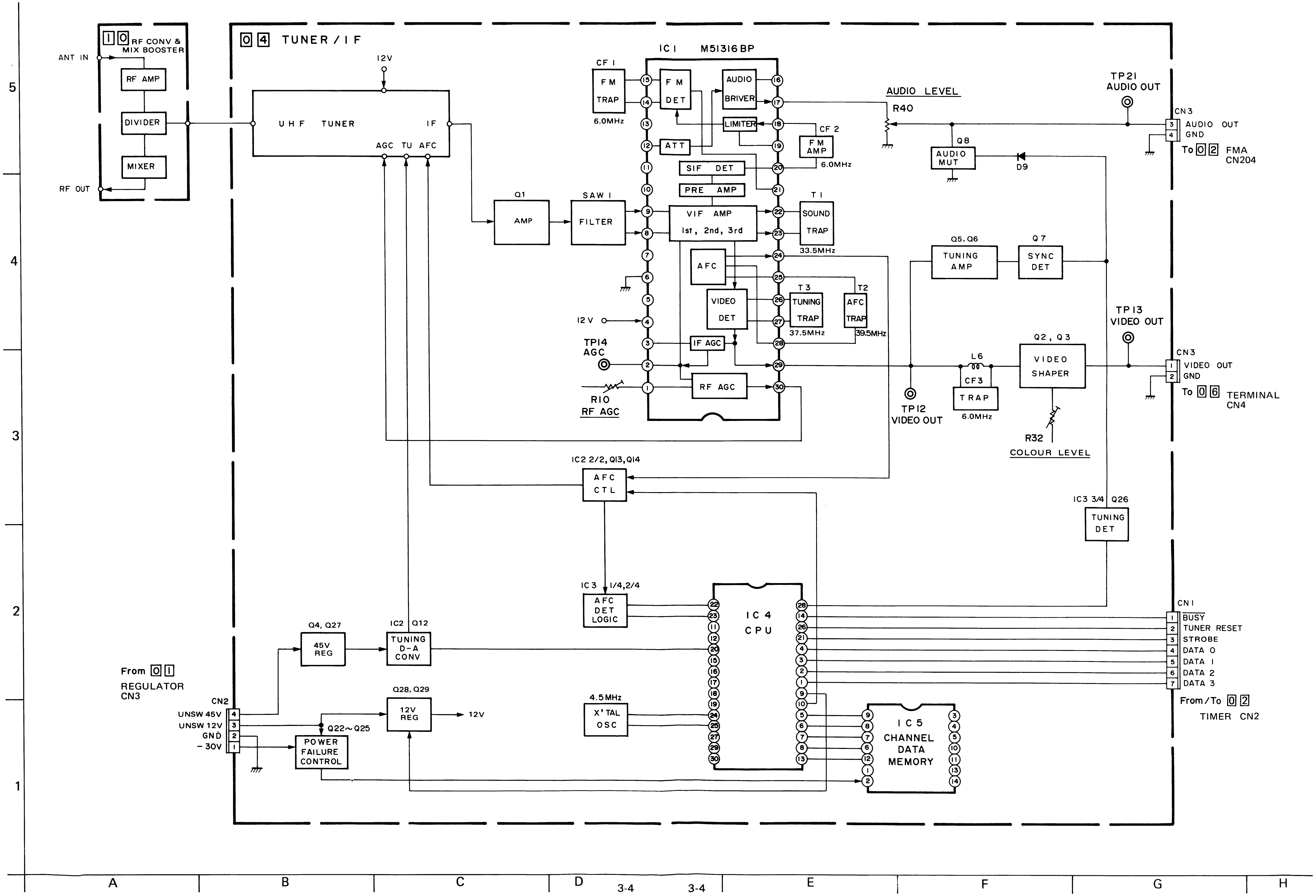
A	AC	: Alternating Current
	ACC	: Automatic Color Control
	A/CTL	: Audio/Control
	ADC	: Analog to Digital Converter
	ADD	: Adder
	ADJ	: Adjustment
	A DUB	: Audio Dubbing
	AE	: Audio Erase
	AEF	: Automatic Editing Function
	AFC	: Automatic Frequency Control
	AFT	: Automatic Fine Tuning
	AGC	: Automatic Gain Control
	AH	: Audio Head
	AHD	: Audio High-Density Disk
	AL	: After Loading
	ALC	: Automatic Light Compensation Automatic Level Control
	ALM	: Alarm
	ALU	: Arithmetic Logic Unit
	AM	: Amplitude Modulation
	AMP	: Amplifier
	ANT	: Antenna
	APC	: Automatic Pedestal Control Automatic Phase Control
	APL	: Average Picture Level
	A/S/M	: Audio/Servo/Mechacon
	ASS'Y	: Assembly
	ATT	: Attenuator
	AUD	: Audio
	AUTO	: Automatic
	AUX	: Auxiliary
B	B	: Base
	BAL	: Balance
	BATT	: Battery
	BBD	: Bucket Brigade Device
	BCD	: Binary Coded Decimal
	BEG	: Beginning
	BFP	: Burst Flag Pulse
	BIT	: Binary Digit
	BLK	: Black, Blanking
	BLU	: Blue
	BNC	: Bayonet Connector
	BOT	: Beginning of Tape
	BPF	: Bandpass Filter
	BRK	: Brake
	BRN	: Brown
	BRT	: Brightness
	BT	: Band Tuning
	BUFF	: Buffer
	BW or B/W	: Black and White
C	C	: Capacitance, Collector, Color
	CAL	: Calibration
	CAP	: Capstan, Capacitor
	CAR	: Carrier
	CARR	: Carrier
	CASS	: Cassette
	CC	: Cassette Compartment
	CCD	: Charge Coupled Device
	CCT	: Circuit
	CdS	: Cadmium Sulphide
	CD	: Count Down
	CE	: Chip Enable
	CF	: Ceramic Filter, Color Frame
	CH	: Channel
	CHG	: Charge
	CHROMA	: Chrominance
	CLK	: Clock
	CLR	: Clear
	CMD	: Command
	CMOS	: Complementary Metal Oxide Semiconductor
	CNT	: Count, Counter
	COL	: Color
	COM	: Common
	COMB	: Combination Comb Filter
	COMP	: Comparator Composite Compensation
	CONN	: Connector
	CONV	: Converter
	CP	: Circuit Protector Clamp Pulse
	CPC	: Capstan Phase Control
	CPU	: Central Processing Unit
	CTC	: Crosstalk Cancel
	CTL	: Control
D	D	: Drum, Digital, Diode, Drain
	DAC	: Digital to Analog Converter
	dB	: Decibel
	DC	: Direct Current
	DD	: Direct Drive
	DEC	: Decoder
	DEMOD	: Demodulator
	DEMUX	: Demultiplexer
	DET	: Detector
	DEV	: Deviation
	DFRS	: Drum Free Running Stop
	DG	: Differential Gain
	DIF	: Differential
	DISCR	: Discriminator
	DL	: Delay Line
	DOC	: Dropout Compensator
	DOD	: Drop Out Detector
	DP	: Differential Phase
	DPC	: Drum Phase Control
	DYAC	: Dynamic Aperture Control
E	E	: Edit, Emitter
	EDP	: Electronic Data Processing
	E-E	: Electric to Electric
	EF	: Emitter-Follower
	EMP	: Emphasis
	EN	: Enable
	ENC	: Encoder
	ENV	: Envelope
	EOT	: End of Tape
	EP	: Extended Play
	EQ	: Equalizer
	ES	: Electronic Switch
	ESNS	: End Sensor
	EXP	: Expander
	EXT	: External
F	F	: Farad, Fuse
	F ADV	: Frame Advance
	FDP	: Fluorescent Display Panel
	FE	: Full Erase
	FET	: Field Effect Transistor
	FF	: Fast Forward Flipflop
	FG	: Frequency Generator
	FM	: Frequency Modulation
	FMA	: FM Audio
	FR	: Full Recording, Frame, Fusible Resistor
	FREQ	: Frequency
	F-V CONV	: Frequency to Voltage Converter
	FWD	: Forward
	FWD S	: Forward Search
G	G	: Green, Gate, Grid
	GEN	: Generator
	GND	: Ground
	GRN	: Green
	GRY	: Gray
H	H	: High, Henry, Hour
	HBF	: Horizontal Burst Flag
	HD	: Horizontal Drive
	HG	: Hall Generator
	HPF	: Highpass Filter
	Hz	: Herz
I	IC	: Integrated Circuit
	ID	: Identification (Pulse)
	IF	: Intermediate Frequency
	IFR	: Infrared
	IFT	: Intermediate Frequency Transformer
	IND	: Indicator
	INH	: Inhibit
	INS	: Insert
	INT	: Internal, Interrupt
	INV	: Inverter
	I/O	: Input/Output
	IR	: Infrared
L	L	: Low, Left
	LCD	: Liquid Crystal Display
	LED	: Light Emitting Diode
	LIM	: Limiter
	LIN	: Linearity
	LOAD	: Loading (Cassette)
	LP	: Long Play
	LPF	: Lowpass Filter
	LSB	: Lower Sideband
M	M	: Motor, Mega
	MAX	: Maximum
	MDA	: Motor Drive Amplifier
	MECHACON	: Mechanism Control
	MIC	: Microphone
	MIN	: Minimum
	MIX	: Mixer, Mixing
	MMV	: Monostable Multivibrator
	MNOS	: Metal Nitride Oxide Semiconductor
	MOD	: Modulation, Modulator
	MODEM	: Modulator-Demodulator
	MON	: Monitor
	MOS	: Metal Oxide Semiconductor
	MPX	: Multiplexer, Multiplex
	MS	: Mode Select
	MUT	: Muting
N	NAND	: Not-And
	NC	: Not Connected, Normally Closed
	NFB	: Negative Feedback
	NLN	: Non-Linear
	NO	: Normally Open
	NOR	: Normal, Not-Or
	NR	: Noise Reduction
O	OP	: Operation
	OPAMP	: Operational Amplifier
	ORN	: Orange
	OSC	: Oscillator
P	PB	: Playback
	PC	: Photocoupler, Pulse Counter
	PCM	: Pulse Code Modulation
	PG	: Pulse Generator
	PGM	: Program
	PI	: Photo Interrupter
	PIF	: Picture Intermediate Frequency
	PLA	: Programmable Logic Array
	PLL	: Phase Locked Loop
	POS	: Position
	p-p	: Peak-to-Peak
	PR	: Pinch Roller
	PREAMP	: Preamplifier
	PRL	: Preroll
	P/S	: Pause/Still
	PSC	: Pulse Swallowing Control
	PU	: Pickup
	PUT	: Programmable Unijunction Transistor
	PWB	: Printed Wiring Board
	PWM	: Pulse Width Modulation
	PWR	: Power
Q	Q	: Quality Factor
R	R	: Red, Right
	RA	: Resistor Array
	RAM	: Random Access Memory
	REC	: Recording
	REF	: Reference
	REG	: Regulated, Regulator
	REM	: Remote
	REMOCON	: Remote Control (Unit)
	REV	: Reverse
	REV S	: Reverse Search
	REW	: Rewind
	RF	: Radio Frequency
	ROM	: Read Only Memory
	R/P	: Record/Playback
	RPT	: Repeat
	RS FF	: RS Flipflop
	RST	: Reset
	RT	: Rotary Transformer
	RUN	: Running
	RY	: Relay
S	SAW	: Sawtooth, Surface Acoustic Wave
	SC	: Subcarrier, Simulcast
	SCH	: Search
	SEL	: Select, Selector
	SENS	: Sensor
	SEP	: Separator
	SF	: Source Follower
	SFF	: Short Fast Forward
	SIF	: Sound Intermediate Frequency
	SN	: Signal to Noise Ratio
	SOL	: Solenoid
	SOS	: Sound on Sound
	SP	: Standard Play
	SR	: Supply Reel
	SREV	: Search Reverse
	SREW	: Short Rewind
	S/S	: Slow/Still
	SSG	: Sync Signal Generator
	SSNS	: Start Sensor
	STD	: Strobe Data, Standard
	SUP	: Supply
	SW	: Switch
	SWD	: Switched
	SYNC	: Synchronization
	SYSCON	: System Control
T	TAL	: Tally
	TBC	: Time Base Corrector
	TC	: Tension Control, Time Code
	TEN	: Tension
	TF	: Thermal Fuse
	TIM	: Timing
	TK	: Tracking
	TNR	: Tuner
	TP	: Test Point
	TPZD	: Trapezoid
	TR	: Transistor, Trimmer
	TRANS	: Transformer
	T/T	: Tuner/Timer
	TU	: Take-up
U	UL	: Unloading
	UNREG	: Unregulated
	UNSW	: Unswitched
V	V	: Vertical, Volt
	VACT	: Video Action
	VCO	: Voltage Controlled Oscillator
	VD	: Vertical Drive
	VIF	: Video Intermediate Frequency
	VLT	: Violet
	VR	: Variable Resistor
	VS	: Video and Sync
	VSCH	: Variable Search
	V/T	: Video/Television
	V/U	: VHF/UHF
	VXO	: Variable Crystal Oscillator
W	W	: Watt
	WARN	: Warning
	W & D	: White and Dark
	WHT	: White
	WV	: Working Voltage
X	XTAL	: Crystal
Y	Y	: Luminance
	YEL	: Yellow

3.3 TUNER/IF AND DEMODULATOR BLOCK DIAGRAM (HR-D565E/EG)

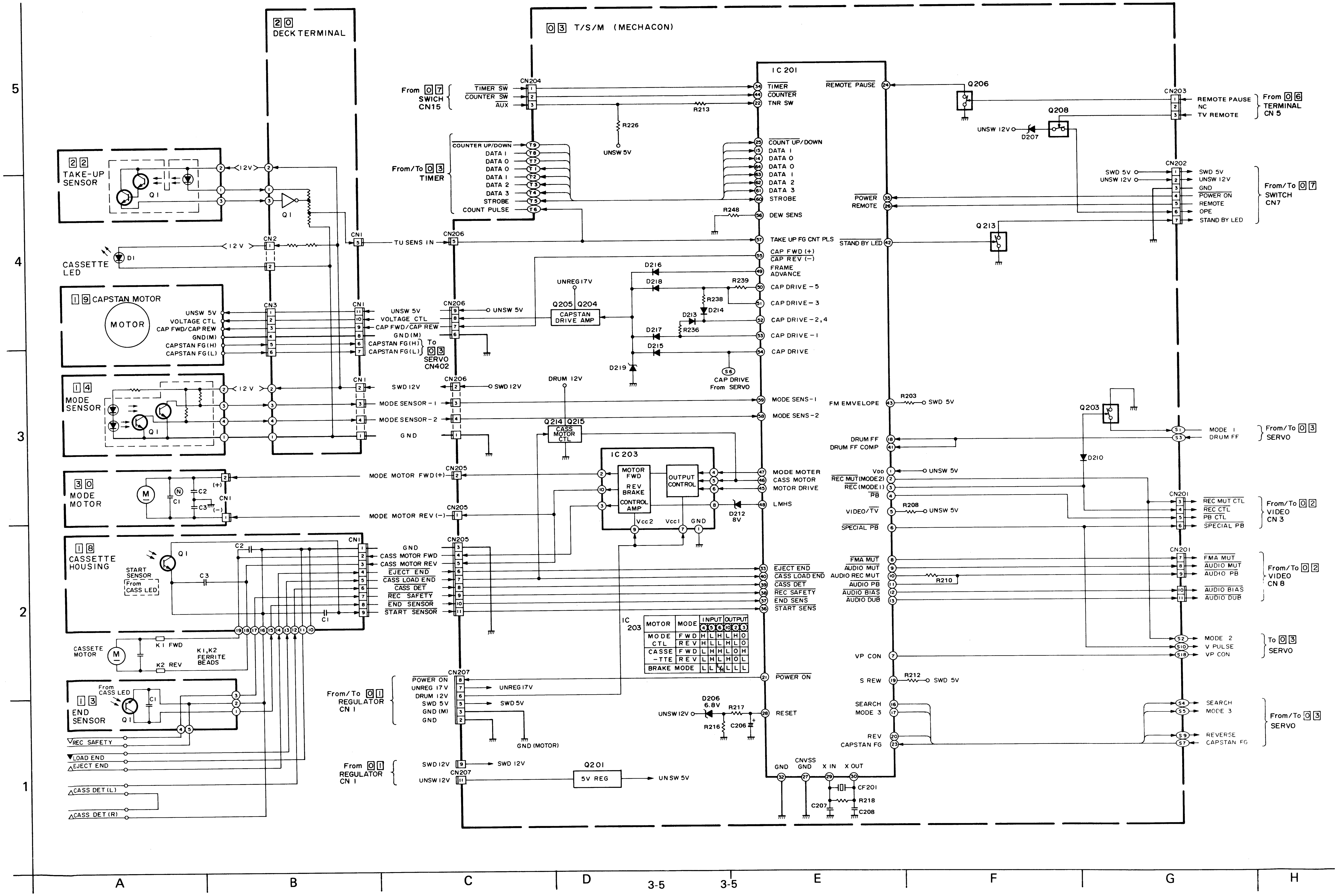


04 TUNER/IF & DEMODULATOR
ANT IN
12V
TNR 1
MB
UHF / VHF CONVINATION TUNER
UB TU VHB VLB AFC AGC IF
T5 FTZ TRAP
Q201 E,F
Q202 AMP
T202 SIF
Q203 AMP
SAW201 FILTER
Q206 AMP
CF204 CF205 BPF 5.74MHz
Q207 AMP
CF201 CF202 BPF 5.5MHz
IC 201
LIM
SIF DET
IF AMP
IF AGC
FM DET
VCO
VIDEO DET
T203 5.5MHz TRAP
R231 AUDIO LEVEL
T204 VCO 38.9MHz
CF203 5.5MHz BPF
IC 202
OUTPUT SW
CONTROL LOGIC
MATRIX
COMP
SIF AMP
PM DET
PILOT AMP
PILOT DET
L207
BPF(DUAL) 274.1Hz
BPF(STEREO) 117.5Hz
Q215 AUDIO MUTING (L)
Q216 AUDIO MUTING (R)
R257 AUDIO LEVEL (L)
R262 AUDIO LEVEL (R)
T207 FH TRAP
T208 FH TRAP
TP21 AUDIO (L)
TP22 AUDIO (R)
CN202
MAIN(L) GND GND SUB(R) DUAL CTL
To 02 FMA,CN204
Q213,Q214 LED DRIVE
Q211,Q212 LED DRIVE
CN201
STEREO DUAL
To 05 DISPLAY CN2
Q217 Q218 MUTING CTL
D204
D203
Q1 AMP
SAW 1 FILTER
IC 1
VIP AMP 1st 2nd 3rd
AFC
VIDEO DET
IF AGC
RF AGC
T1 33.4MHz SOUND TRAP
T3 TUNING TRAP 38.9MHz
T2 AFC TRAP 39.5 MHz
TP14 AGC
R10 RF AGC
TP12 V. DET OUT
Q5,Q6 TUNING AMP
Q7 SYNC DET
L6
CF3 TRAP 5.5 MHz
Q2 VIDEO SHAPER
R32 COLOUR LEVEL
TP13B VIDEO
Q30 VIDEO AMP
CN3 VIDEO OUT GND
To 06 TERMINL CN4
Q3 VIDEO AMP
R39 VPS LEVEL
TP13 VPS VIDEO OUT
CN4 VIDEO OUT GND
To 38 VPS CN1
IC3 3/4 Q26 TUNING DET
IC 5 CHANNEL DATA CONTROL
Q15 Q16
Q17 Q18
Q19 Q21
IC2 2/2 Q13,Q14 AFC CTL
IC3 4/4 FINE
IC3 1/4,2/4 AFC DET LOGIC
Q22~Q25 POWER FAILURE CONTROL
Q28,Q29 TUNER ON/OFF SW
SWD 12V
CN2
-30V GND UNSW 12V UNSW45V
Q4,Q27 45V REG
TUNING D-A CONV. IC2 1/2 Q12
From 01 REGULATOR CN3
IC 4 CPU
CF5 4.0MHz X'TAL OSC
CN1
DATA 3 DATA 2 DATA 1 DATA 0 STROBE TUNER RESET BUSY
From/To 03 TIMER CN1
1 2 3 4 5
A B C D E F G H

3.4 TUNER/IF BLOCK DIAGRAM (HR-D565EK)


10 RF CONV & MIX BOOSTER
ANT IN
RF AMP
DIVIDER
MIXER
RF OUT
04 TUNER / IF
12V
UHF TUNER
IF
AGC TU AFC
Q1
AMP
SAW 1
FILTER
CF 1
FM TRAP
6.0MHz
IC1 M51316BP
FM DET
AUDIO BRIVER
LIMITER
ATT
SIF DET
PRE AMP
VIF AMP
1st, 2nd, 3rd
AFC
VIDEO DET
IF AGC
RF AGC
CF 2
FM AMP
6.0MHz
T1
SOUND TRAP
33.5MHz
T3
TUNING TRAP
37.5MHz
T2
AFC TRAP
39.5MHz
12 V
TP14 AGC
R10 RF AGC
AUDIO LEVEL
R40
Q8
AUDIO MUT
D9
TP21 AUDIO OUT
CN3
3 AUDIO OUT
4 GND
To 02 FMA CN204
Q5, Q6
TUNING AMP
Q7
SYNC DET
TP13 VIDEO OUT
L6
CF3
TRAP
6.0MHz
Q2, Q3
VIDEO SHAPER
R32
COLOUR LEVEL
TP12 VIDEO OUT
CN3
1 VIDEO OUT
2 GND
To 06 TERMINAL CN4
IC2 2/2, Q13, Q14
AFC CTL
IC3 3/4 Q26
TUNING DET
IC3 1/4, 2/4
AFC DET LOGIC
IC4 CPU
CN1
1 BUSY
2 TUNER RESET
3 STROBE
4 DATA 0
5 DATA 1
6 DATA 2
7 DATA 3
From/To 02 TIMER CN2
Q4, Q27
45V REG
IC2 Q12
TUNING D-A CONV
Q28, Q29
12V REG
12V
4.5MHz
X'TAL OSC
IC5 CHANNEL DATA MEMORY
From 01 REGULATOR CN3
CN2
4 UNSW 45V
3 UNSW 12V
2 GND
1 -30V
Q22~Q25
POWER FAILURE CONTROL
1
2
3
4
5
A
B
C
D
E
F
G
H

3.5 MECHANISM CONTROL BLOCK DIAGRAM

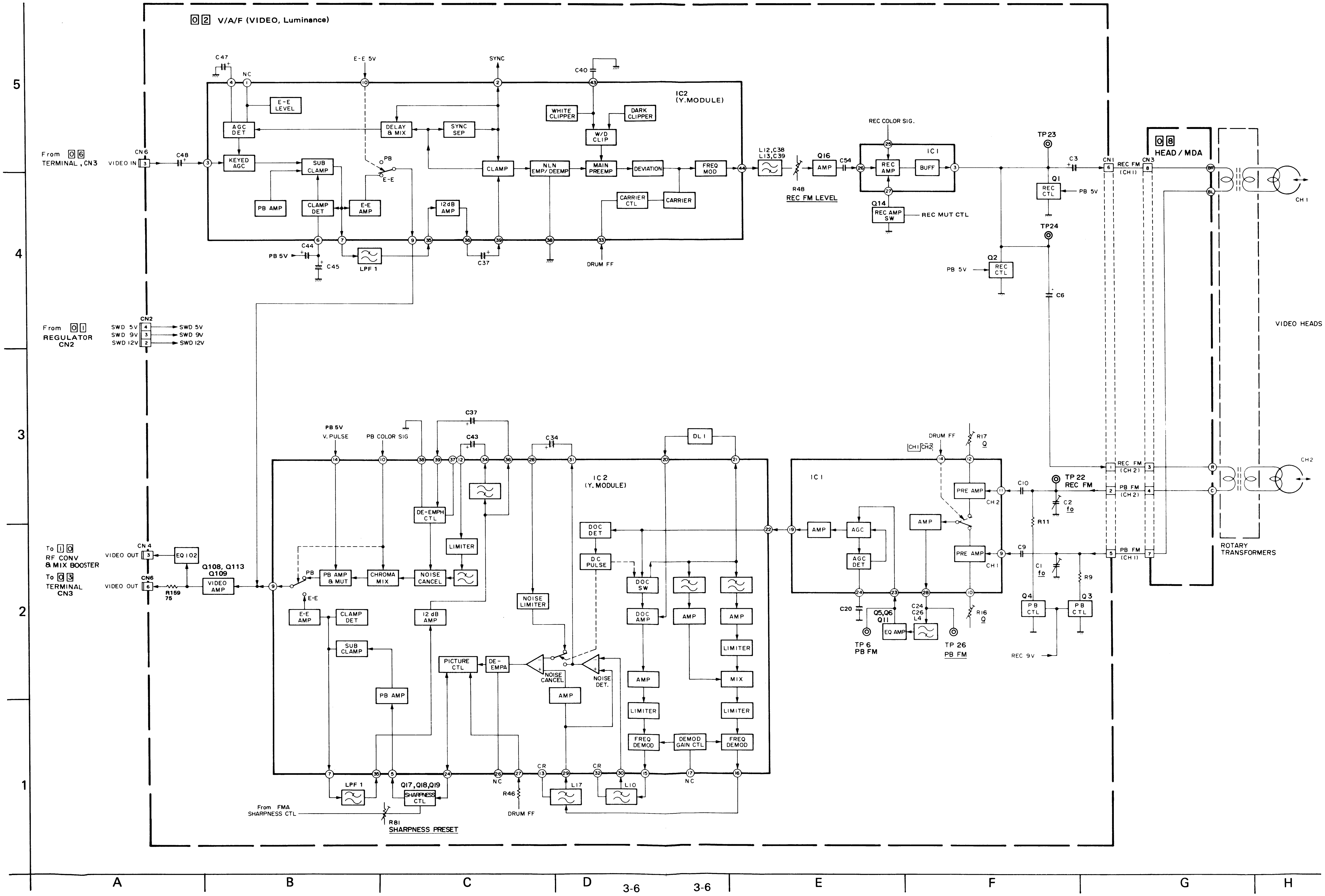


20 DECK TERMINAL
03 T/S/M (MECHACON)
IC 201
IC 203
22 TAKE-UP SENSOR
CASSETTE LED
19 CAPSTAN MOTOR
MOTOR
14 MODE SENSOR
30 MODE MOTOR
18 CASSETTE HOUSING
START SENSOR
From CASS LED
CASSETE MOTOR
K1 FWD
K2 REV
K1,K2 FERRITE BEADS
13 END SENSOR
REC SAFETY
LOAD END
EJECT END
CASS DET(L)
CASS DET(R)
From 07 SWICH CN15
TIMER SW
COUNTER SW
AUX
From/To 03 TIMER
COUNTER UP/DOWN
DATA 1
DATA 0
DATA 2
DATA 3
STROBE
COUNT PULSE
TU SENS IN
UNSW 5V
VOLTAGE CTL
CAP FWD/CAP REW
GND(M)
CAPSTAN FG(H)
CAPSTAN FG(L)
To 03 SERVO CN402
SWD 12V
MODE SENSOR-1
MODE SENSOR-2
GND
MODE MOTOR FWD(+)
MODE MOTOR REV(−)
CASS MOTOR FWD
CASS MOTOR REV
EJECT END
CASS LOAD END
CASS DET
REC SAFETY
END SENSOR
START SENSOR
From/To 01 REGULATOR CN 1
POWER ON
UNREG 17V
DRUM 12V
SWD 5V
GND (MOTOR)
From 01 REGULATOR CN 1
UNSW 12V
Q201
5V REG
UNSW 5V
CN204
CN206
CN205
CN207
CN1
CN2
CN3
R226
R213
R248
UNREG17V
Q205 Q204
CAPSTAN DRIVE AMP
D216
D218
D217
D215
D213
D214
D219
R239
R238
R236
CAP DRIVE From SERVO
DRUM 12V
Q214 Q215
CASS MOTOR CTL
MOTOR FWD
REV BRAKE
CONTROL AMP
OUTPUT CONTROL
Vcc2
Vcc1
D212 8V
D206 6.8V
R217
R216
C206
TIMER
COUNTER
TNR SW
COUNT UP/DOWN
DEW SENS
TAKE UP FG CNT PLS
CAP FWD (+)
CAP REV (−)
FRAME ADVANCE
CAP DRIVE-5
CAP DRIVE-3
CAP DRIVE-2,4
CAP DRIVE-1
CAP DRIVE
MODE SENS-1
MODE SENS-2
MODE MOTER
CASS MOTOR
MOTOR DRIVE
LMHS
EJECT END
CASS LOAD END
CASS DET
REC SAFETY
END SENS
START SENS
POWER ON
RESET
GND
CNVSS GND
X IN
X OUT
CF201
R218
C207
C208
REMOTE PAUSE
POWER
REMOTE
STAND BY LED
FM EMVELOPE
R203
DRUM FF
DRUM FF COMP
VDD
REC MUT(MODE2)
REC (MODE1)
PB
VIDEO/TV
R208
SPECIAL PB
FMA MUT
AUDIO MUT
AUDIO REC MUT
AUDIO PB
AUDIO BIAS
AUDIO DUB
R210
VP CON
S REW
R212
SEARCH MODE 3
REV CAPSTAN FG
Q206
Q208
UNSW 12V
D207
Q213
Q203
D210
CN203
REMOTE PAUSE
NC
TV REMOTE
From 06 TERMINAL CN 5
CN202
SWD 5V
UNSW 12V
GND
POWER ON
REMOTE
OPE
STAND BY LED
From/To 07 SWITCH CN7
MODE 1
DRUM FF
From/To 03 SERVO
CN201
REC MUT CTL
REC CTL
PB CTL
SPECIAL PB
From/To 02 VIDEO CN 3
FMA MUT
AUDIO MUT
AUDIO PB
AUDIO BIAS
AUDIO DUB
From/To 02 VIDEO CN 8
MODE 2
V PULSE
VP CON
To 03 SERVO
SEARCH
MODE 3
REVERSE
CAPSTAN FG
From/To 03 SERVO
5
4
3
2
1
A
B
C
D
E
F
G
H

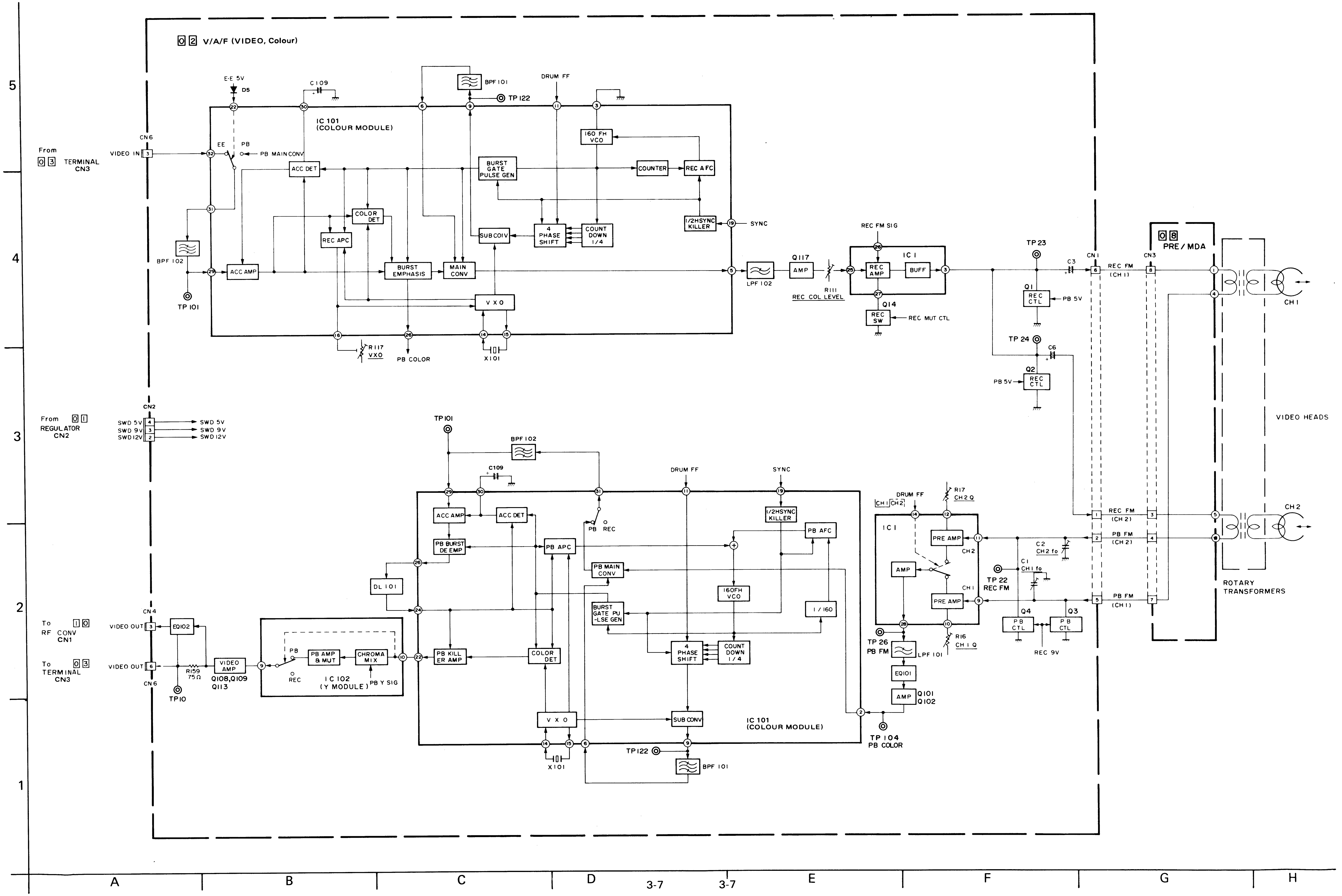
IC 203

MOTOR	MODE	INPUT ④	INPUT ⑤	INPUT ⑥	OUTPUT ⑩	OUTPUT ②	OUTPUT ③
MODE CTL	FWD	H	L	H	L	H	O
	REV	H	L	L	H	L	O
CASSE-TTE	FWD	L	H	H	L	O	H
	REV	L	H	L	H	O	L
BRAKE MODE		L	L	L/H	L	L	L

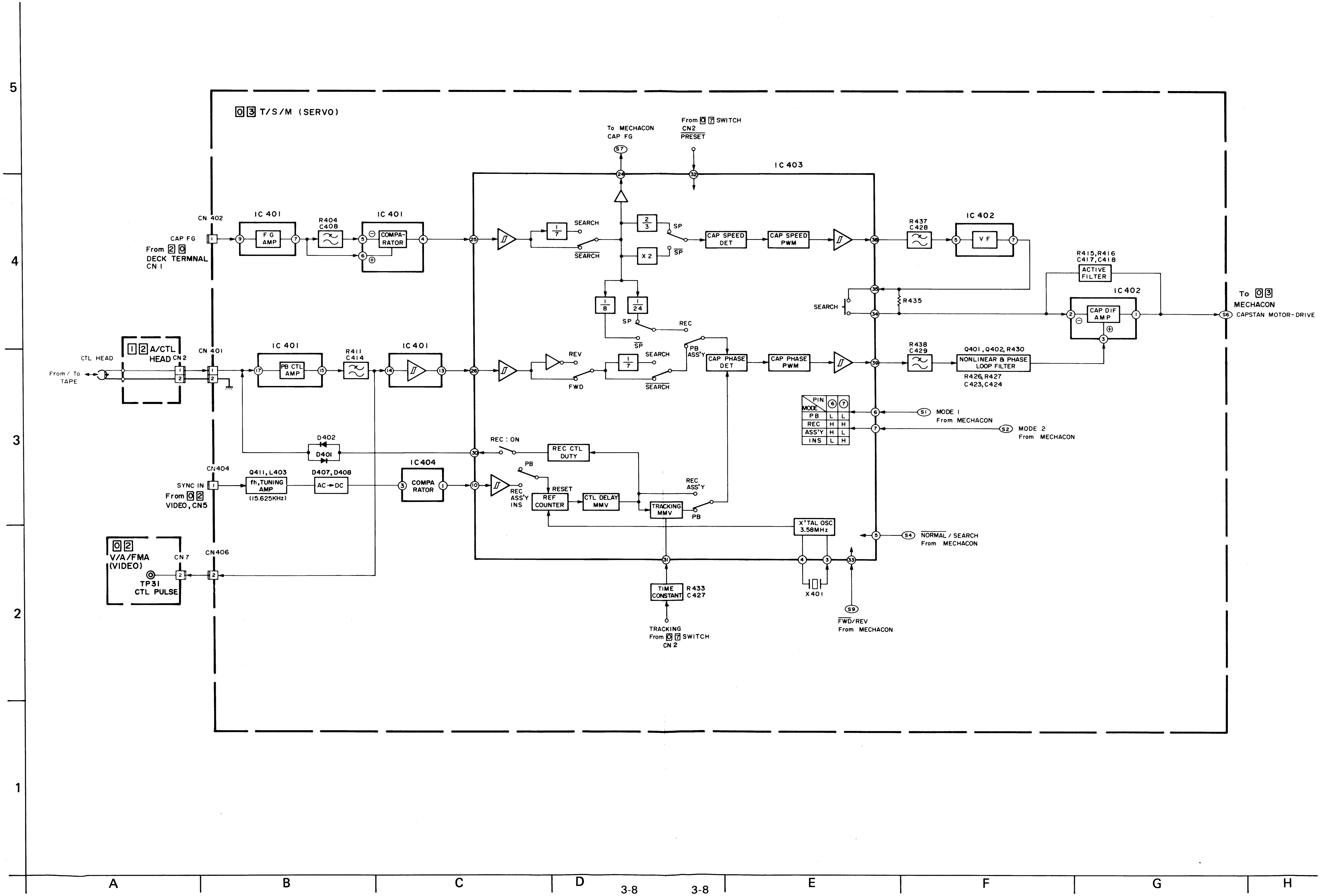
3.6 VIDEO (Luminance) BLOCK DIAGRAM


02 V/A/F (VIDEO, Luminance)
From 06 TERMINAL, CN3
VIDEO IN
CN6
C48
C47
NC
E-E 5V
SYNC
C40
IC2 (Y.MODULE)
E-E LEVEL
AGC DET
DELAY & MIX
SYNC SEP
WHITE CLIPPER
DARK CLIPPER
W/D CLIP
KEYED AGC
SUB CLAMP
PB
E-E
CLAMP
NLN EMP/DEEMP
MAIN PREEMP
DEVIATION
FREQ MOD
PB AMP
CLAMP DET
E-E AMP
12dB AMP
CARRIER CTL
CARRIER
C44
PB 5V
C45
LPF 1
C37
DRUM FF
L12, C38
L13, C39
R48
REC FM LEVEL
Q16
AMP
C54
REC COLOR SIG.
IC1
REC AMP
BUFF
Q14
REC AMP SW
REC MUT CTL
TP23
C3
Q1
REC CTL
PB 5V
TP24
Q2
REC CTL
C6
CN1
REC FM (CH1)
CN3
08 HEAD / MDA
CH1
VIDEO HEADS
From 01 REGULATOR CN2
CN2
SWD 5V
SWD 9V
SWD 12V
To 10 RF CONV & MIX BOOSTER
To 03 TERMINAL CN3
CN4
VIDEO OUT
EQ102
Q108, Q113 Q109
VIDEO AMP
R159 75
PB 5V
V.PULSE
PB COLOR SIG
C37
C43
C34
DL1
DE-EMPH CTL
LIMITER
PB AMP & MUT
CHROMA MIX
NOISE CANCEL
E-E AMP
CLAMP DET
SUB CLAMP
PB AMP
12 dB AMP
PICTURE CTL
DE-EMPA
NOISE LIMITER
NOISE CANCEL
NOISE DET.
AMP
DOC DET
DC PULSE
DOC SW
DOC AMP
AMP
AMP
LIMITER
MIX
AMP
LIMITER
LIMITER
FREQ DEMOD
DEMOD GAIN CTL
FREQ DEMOD
LPF 1
Q17, Q18, Q19
SHARPNESS CTL
From FMA SHARPNESS CTL
R81
SHARPNESS PRESET
NC
R46
DRUM FF
CR
L17
CR
L10
NC
IC1
DRUM FF
CH1 CH2
R17 Q
PRE AMP
CH2
AMP
AGC
AGC DET
PRE AMP
CH1
C10
TP22 REC FM
C2 fo
R11
C9
C1 fo
R9
Q4 PB CTL
Q3 PB CTL
REC 9V
C20
TP6 PB FM
Q5, Q6 Q11
EQ AMP
C24 C26 L4
TP26 PB FM
R16 Q
REC FM (CH2)
PB FM (CH2)
PB FM (CH1)
CH2
ROTARY TRANSFORMERS
1
2
3
4
5
A
B
C
D
E
F
G
H

3.7 VIDEO (Colour) BLOCK DIAGRAM

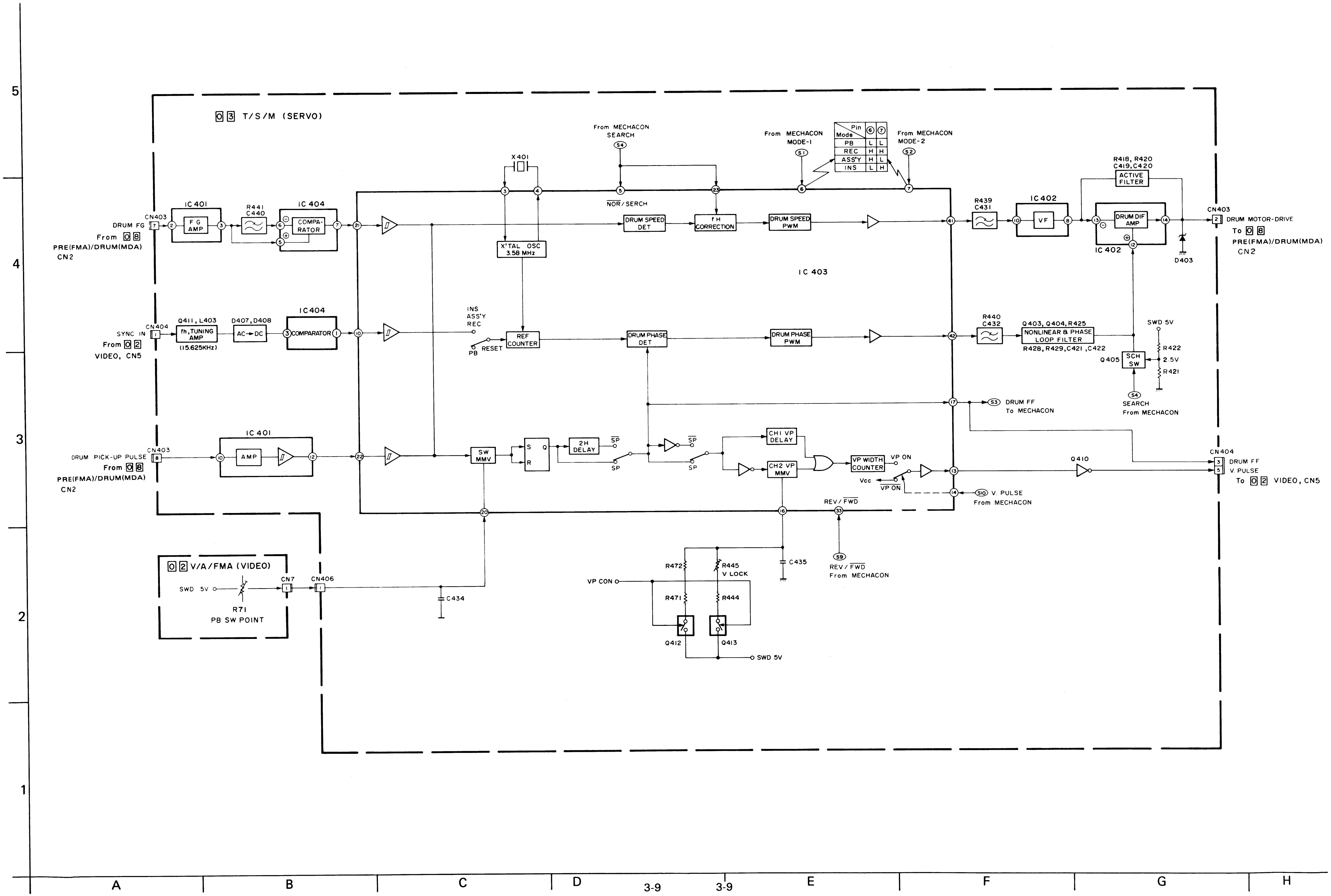

02 V/A/F (VIDEO, Colour)
E-E 5V
D5
C109
BPF 101
TP 122
DRUM FF
IC 101 (COLOUR MODULE)
160 FH VCO
From 03 TERMINAL CN3
CN6
VIDEO IN
EE
PB
PB MAIN CONV
ACC DET
BURST GATE PULSE GEN
COUNTER
REC AFC
COLOR DET
1/2HSYNC KILLER
SYNC
REC APC
SUB CONV
4 PHASE SHIFT
COUNT DOWN 1/4
BPF 102
ACC AMP
BURST EMPHASIS
MAIN CONV
LPF 102
Q117
AMP
R111 REC COL LEVEL
REC FM SIG
IC 1
REC AMP
BUFF
Q14
REC SW
REC MUT CTL
TP 23
C3
CN1
REC FM (CH 1)
CN3
08 PRE/MDA
TP 101
VXO
R117 VXO
PB COLOR
X101
Q1
REC CTL
PB 5V
TP 24
C6
Q2
REC CTL
PB 5V
CH 1
VIDEO HEADS
From 01 REGULATOR CN2
CN2
SWD 5V
SWD 9V
SWD 12V
TP101
BPF 102
C109
DRUM FF
SYNC
ACC AMP
ACC DET
PB REC
1/2HSYNC KILLER
PB AFC
PB BURST DE EMP
PB APC
PB MAIN CONV
DRUM FF
CH 1 CH 2
R17 CH 2 Q
IC 1
PRE AMP
CH 2
REC FM (CH 2)
PB FM (CH 2)
CH 2
C2 CH 2 fo
DL 101
160FH VCO
AMP
CH 1
TP 22 REC FM
C1 CH 1 fo
BURST GATE PULSE GEN
1/160
PRE AMP
PB FM (CH 1)
ROTARY TRANSFORMERS
Q4
PB CTL
Q3
PB CTL
REC 9V
R16 CH 1 Q
To 10 RF CONV CN1
CN4
VIDEO OUT
EQ102
To 03 TERMINAL CN3
VIDEO OUT
CN6
R159 75Ω
TP10
VIDEO AMP
Q108, Q109 Q113
PB
PB AMP & MUT
CHROMA MIX
REC
IC 102 (Y MODULE)
PB Y SIG
PB KILLER AMP
COLOR DET
4 PHASE SHIFT
COUNT DOWN 1/4
TP 26 PB FM
LPF 101
EQ101
AMP
Q101 Q102
VXO
SUB CONV
IC 101 (COLOUR MODULE)
TP 104 PB COLOR
TP122
BPF 101
X101
A
B
C
D
E
F
G
H
1
2
3
4
5

3.8 CAPSTAN SERVO BLOCK DIAGRAM


5
4
3
2
1
A
B
C
D
E
F
G
H
03 T/S/M (SERVO)
To MECHACON
CAP FG
S7
From 07 SWITCH
CN2
PRESET
IC 403
CN 402
CAP FG
From 20
DECK TERMNAL
CN 1
IC 401
F G AMP
R404
C408
IC 401
COMPA-RATOR
SEARCH
SEARCH
1/7
2/3
SP
X 2
SP
CAP SPEED DET
CAP SPEED PWM
R437
C428
IC 402
V F
R415,R416
C417,C418
ACTIVE FILTER
IC 402
CAP DIF AMP
SEARCH
R435
1/8
1/24
SP
REC
SP
To 03
MECHACON
S6
CAPSTAN MOTOR-DRIVE
CTL HEAD
From / To
TAPE
12 A/CTL
HEAD
CN 2
CN 401
IC 401
PB CTL AMP
R411
C414
IC 401
REV
FWD
1/7
SEARCH
SEARCH
PB
ASS'Y
CAP PHASE DET
CAP PHASE PWM
R438
C429
Q401, Q402, R430
NONLINEAR & PHASE LOOP FILTER
R426, R427
C423, C424
S1
MODE 1
From MECHACON
S2
MODE 2
From MECHACON
D402
D401
REC : ON
REC CTL DUTY
CN404
SYNC IN
From 02
VIDEO, CN5
Q411, L403
fh, TUNING AMP
(15.625KHz)
D407, D408
AC → DC
IC404
COMPA RATOR
PB
REC
ASS'Y
INS
RESET
REF COUNTER
CTL DELAY MMV
REC
ASS'Y
TRACKING MMV
PB
X'TAL OSC
3.58MHz
S4
NORMAL / SEARCH
From MECHACON
02
V/A/FMA
(VIDEO)
CN 7
CN406
TP31
CTL PULSE
TIME CONSTANT
R433
C427
TRACKING
From 07 SWITCH
CN 2
X401
S9
FWD/REV
From MECHACON

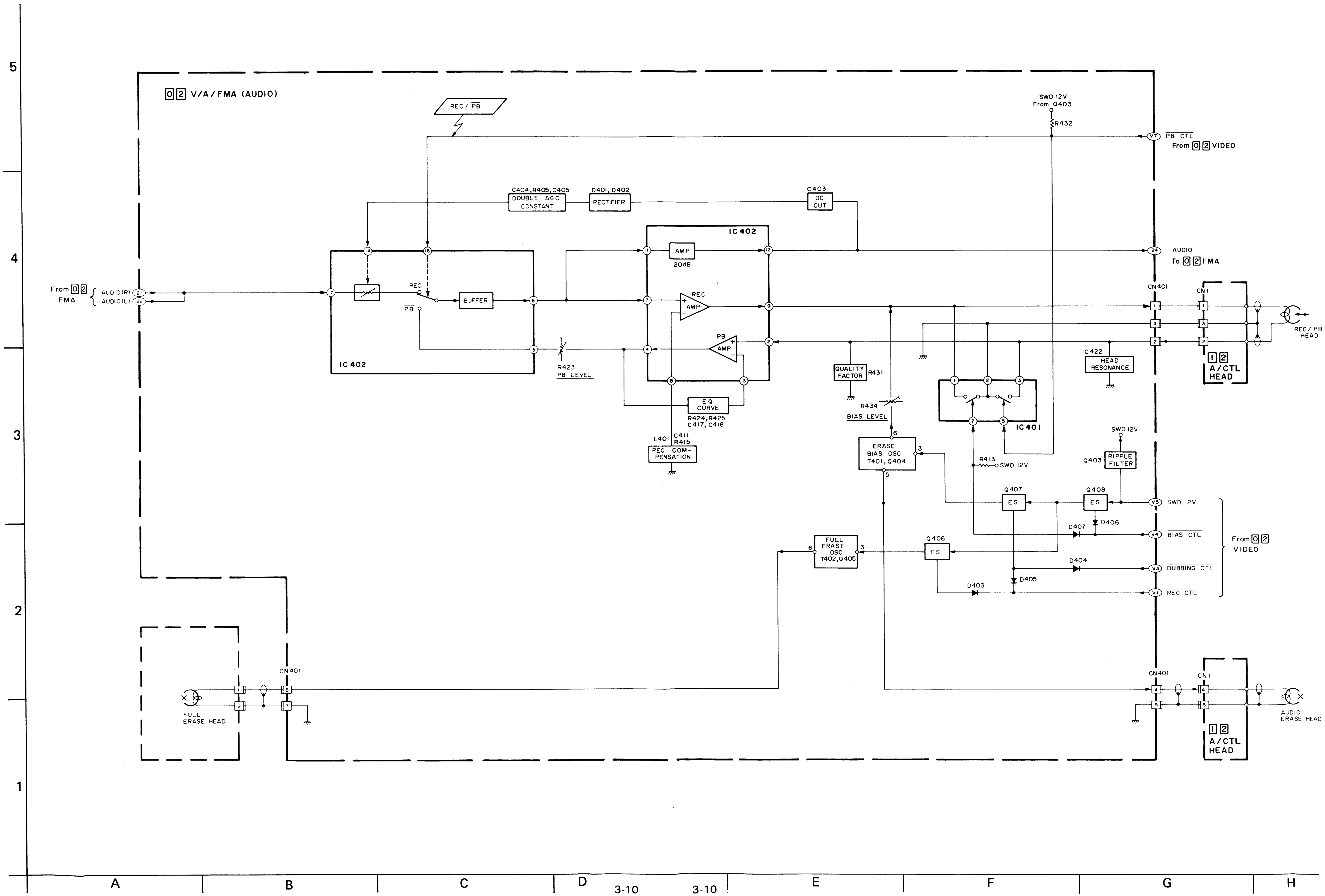
MODE \ PIN	⑥	⑦
PB	L	L
REC	H	H
ASS'Y	H	L
INS	L	H

3.9 DRUM SERVO BLOCK DIAGRAM


0 3 T/S/M (SERVO)
From MECHACON SEARCH
S4
From MECHACON MODE-1
S1
From MECHACON MODE-2
S2
X401
CN403
DRUM FG
From 0 8
PRE(FMA)/DRUM(MDA)
CN2
IC 401
F G AMP
R441
C440
IC 404
COMPA-RATOR
X'TAL OSC 3.58 MHz
NOR/SERCH
DRUM SPEED DET
f H CORRECTION
DRUM SPEED PWM
R439
C431
IC 402
VF
R418, R420
C419, C420
ACTIVE FILTER
DRUM DIF AMP
IC 402
D403
CN403
DRUM MOTOR-DRIVE
To 0 8
PRE(FMA)/DRUM(MDA)
CN2
IC 403
SYNC IN
CN404
From 0 2
VIDEO, CN5
Q411, L403
fh, TUNING AMP
(15.625KHz)
D407, D408
AC→DC
IC404
COMPARATOR
INS
ASS'Y
REC
PB
RESET
REF COUNTER
DRUM PHASE DET
DRUM PHASE PWM
R440
C432
Q403, Q404, R425
NONLINEAR & PHASE LOOP FILTER
R428, R429, C421, C422
SWD 5V
R422
2.5V
R421
Q405
SCH SW
S4
SEARCH
From MECHACON
S3 DRUM FF
To MECHACON
DRUM PICK-UP PULSE
CN403
From 0 8
PRE(FMA)/DRUM(MDA)
CN2
IC 401
AMP
SW MMV
S
Q
R
2H DELAY
SP
SP
SP
SP
CH1 VP DELAY
CH2 VP MMV
VP WIDTH COUNTER
VP ON
Vcc
VP ON
Q410
CN404
DRUM FF
V. PULSE
To 0 2 VIDEO, CN5
S10 V. PULSE
From MECHACON
REV/FWD
S9
REV/FWD
From MECHACON
0 2 V/A/FMA (VIDEO)
SWD 5V
R71
PB SW POINT
CN7
CN406
C434
VP CON
R472
R445
V LOCK
C435
R471
R444
Q412
Q413
SWD 5V
5
4
3
2
1
A
B
C
D
E
F
G
H

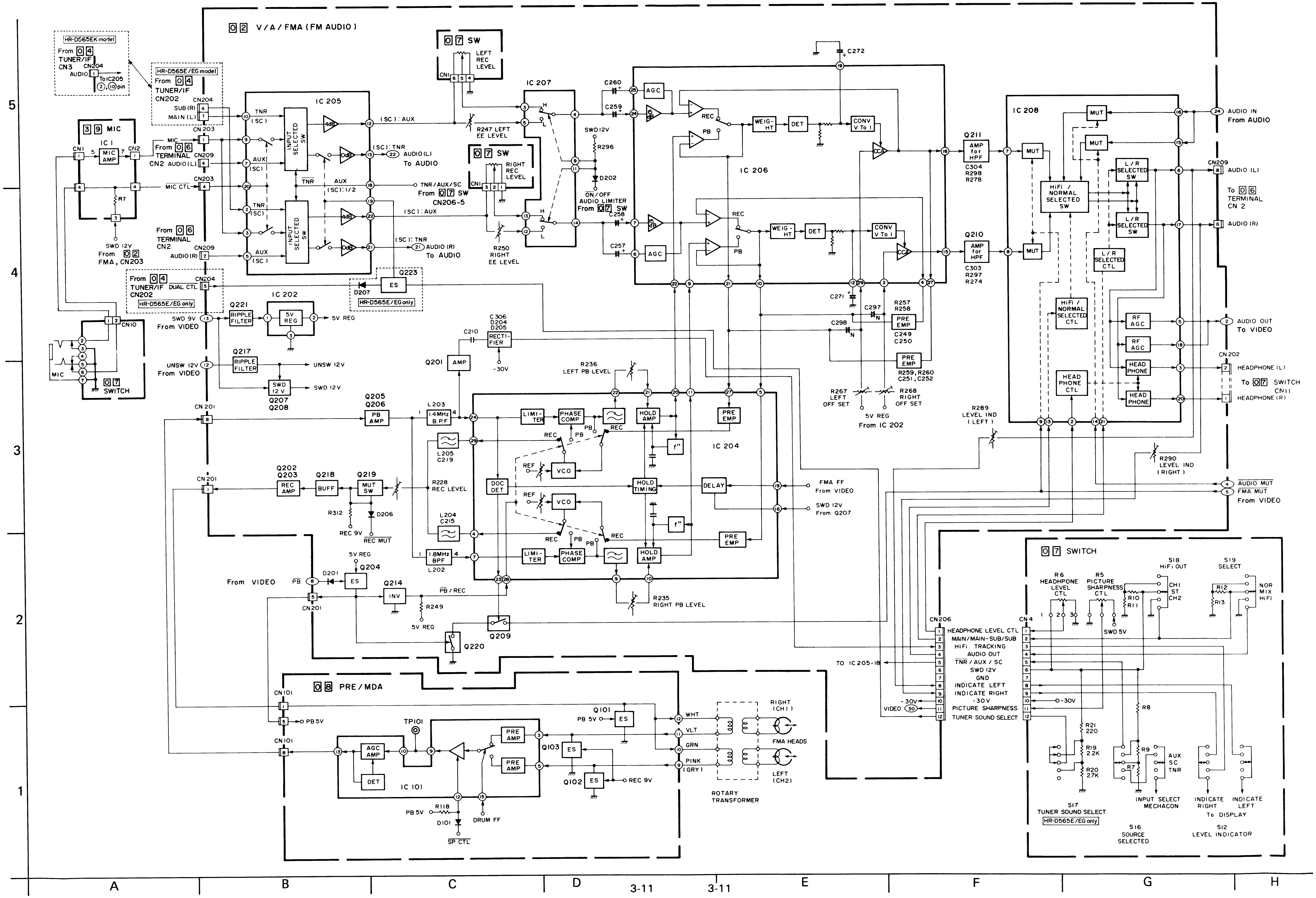
Pin / Mode	⑥	⑦
PB	L	L
REC	H	H
ASS'Y	H	L
INS	L	H

3.10 AUDIO BLOCK DIAGRAM

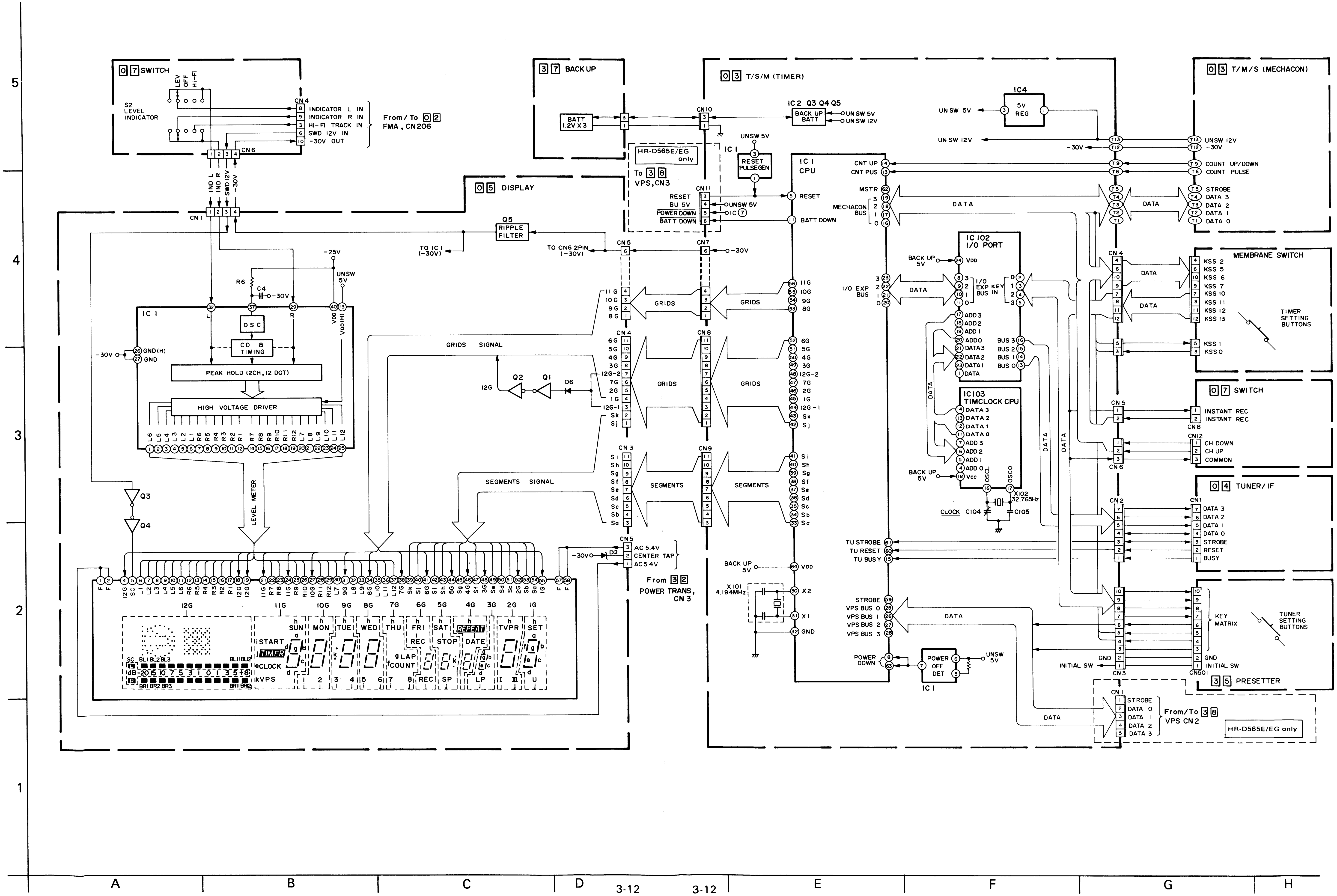


02 V/A/FMA (AUDIO)
REC / PB
SWD 12V
From Q403
R432
V7 PB CTL
From 02 VIDEO
C404, R405, C405
DOUBLE AGC CONSTANT
D401, D402
RECTIFIER
C403
DC CUT
IC 402
AMP
20dB
AUDIO
To 02 FMA
From 02 FMA
AUDIO (R) 21
AUDIO (L) 22
REC
PB
BUFFER
IC 402
R423
PB LEVEL
REC AMP
PB AMP
EQ CURVE
R424, R425
C417, C418
L401
C411
R415
REC COM-PENSATION
QUALITY FACTOR
R431
R434
BIAS LEVEL
ERASE BIAS OSC
T401, Q404
CN401
CN1
REC / PB HEAD
C422
HEAD RESONANCE
12 A/CTL HEAD
IC401
R413
SWD 12V
SWD 12V
Q403
RIPPLE FILTER
Q407
ES
Q408
ES
V5 SWD 12V
D406
D407
V4 BIAS CTL
From 02 VIDEO
Q406
ES
FULL ERASE OSC
T402, Q405
D404
V3 DUBBING CTL
D405
D403
V1 REC CTL
CN401
FULL ERASE HEAD
CN401
CN1
AUDIO ERASE HEAD
12 A/CTL HEAD
5
4
3
2
1
A
B
C
D
E
F
G
H

3.11 FM AUDIO BLOCK DIAGRAM


02 V/A/FMA (FM AUDIO)
HR-D565EK model
From 04 TUNER/IF CN3 CN204 AUDIO To IC205 ②,⑩pin
HR-D565E/EG model
From 04 TUNER/IF CN202 CN204 SUB (R) MAIN (L)
39 MIC
IC1 MIC AMP
CN1 CN2
R7
SWD 12V From 02 FMA, CN203
MIC
From 06 TERMINAL CN2 AUDIO (L) CN209
CN203 MIC CTL
From 06 TERMINAL CN2 CN209 AUDIO (R)
From 04 TUNER/IF CN202 DUAL CTL CN204
HR-D565E/EG only
CN10
MIC
07 SWITCH
IC 205
TNR (SC)
AUX (SC)
INPUT SELECTED SW
4dB
0dB
TNR
AUX (SC): 1/2
(SC): AUX
(SC): TNR AUDIO (L) To AUDIO
TNR/AUX/SC From 07 SW CN206-5
(SC): AUX
(SC): TNR AUDIO (R) To AUDIO
ES Q223 D207 HR-D565E/EG only
Q221 RIPPLE FILTER
IC 202 5V REG 5V REG
SWD 9V From VIDEO
Q217 RIPPLE FILTER UNSW 12V
UNSW 12V From VIDEO
SWD 12V Q207 Q208 SWD 12V
07 SW CN1 LEFT REC LEVEL
R247 LEFT EE LEVEL
07 SW CN1 RIGHT REC LEVEL
R250 RIGHT EE LEVEL
IC 207
H L
C260 C259
SWD12V R296 D202
ON/OFF AUDIO LIMITER From 07 SW
C258 C257
C272
IC 206
AGC
5dB
REC PB
WEIG-HT
DET
CONV V To I
CCA
C271 C297 C298
R257 R258 PRE EMP C249 C250
PRE EMP R259, R260 C251, C252
R267 LEFT OFF SET
R268 RIGHT OFF SET
5V REG From IC 202
Q211 AMP for HPF C304 R298 R278
Q210 AMP for HPF C303 R297 R274
IC 208
MUT
HiFi / NORMAL SELECTED SW
L/R SELECTED SW
L/R SELECTED CTL
HiFi / NORMAL SELECTED CTL
RF AGC
HEAD PHONE
HEAD PHONE CTL
AUDIO IN From AUDIO
CN209 AUDIO (L)
To 06 TERMINAL CN 2
AUDIO (R)
AUDIO OUT To VIDEO
CN 202 HEADPHONE (L)
To 07 SWITCH CN11
HEADPHONE (R)
R289 LEVEL IND (LEFT)
R290 LEVEL IND (RIGHT)
AUDIO MUT
FMA MUT
From VIDEO
C306 D204 D205 RECTI-FIER -30V
C210 Q201 AMP
R236 LEFT PB LEVEL
CN 201
Q205 Q206 PB AMP
L203 1.4MHz B.P.F
L205 C219
LIMI-TER
PHASE COMP
HOLD AMP
PRE EMP
IC 204
REC PB
REF VCO
f''
DOC DET
HOLD TIMING
DELAY
FMA FF From VIDEO
SWD 12V From Q207
Q202 Q203 REC AMP
Q218 BUFF
Q219 MUT SW
R228 REC LEVEL
R312 REC 9V D206 REC MUT
L204 C215
1.8MHz BPF L202
R235 RIGHT PB LEVEL
5V REG Q204
From VIDEO PB D201 ES
Q214 INV PB/REC
R249 5V REG
Q209 Q220
CN206
HEADPHONE LEVEL CTL
MAIN/MAIN-SUB/SUB
HiFi TRACKING
AUDIO OUT
TNR/AUX/SC
SWD 12V
GND
INDICATE LEFT
INDICATE RIGHT
-30V
PICTURE SHARPNESS
TUNER SOUND SELECT
TO IC205-18
-30V
VIDEO
07 SWITCH
R6 HEADPHONE LEVEL CTL
R5 PICTURE SHARPNESS CTL
S18 HiFi OUT CH1 ST CH2
R10 R11
S19 SELECT NOR MIX HiFi
R12 R13
SWD 5V
CN4
R8
R21 220
R19 2.2K
R20 2.7K
R9 R7
AUX SC TNR
S17 TUNER SOUND SELECT HR-D565E/EG only
INPUT SELECT MECHACON
INDICATE RIGHT
INDICATE LEFT
To DISPLAY
S16 SOURCE SELECTED
S12 LEVEL INDICATOR
08 PRE/MDA
CN101
PB 5V
TP101
IC 101
AGC AMP
DET
PRE AMP
R118 PB 5V D101 SP CTL
DRUM FF
Q101 PB 5V ES
Q103 ES
Q102 ES REC 9V
WHT VLT GRN PINK (GRY)
RIGHT (CH1)
FMA HEADS
LEFT (CH2)
ROTARY TRANSFORMER
1 2 3 4 5
A B C D E F G H

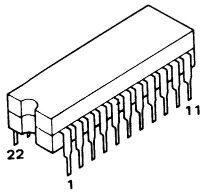
3.12 TIMER BLOCK DIAGRAM


07 SWITCH
S2 LEVEL INDICATOR
LEV
OFF
Hi-Fi
CN4
INDICATOR L IN
INDICATOR R IN
Hi-Fi TRACK IN
SWD 12V IN
-30V OUT
From/To 02 FMA, CN206
CN6
IND L
IND R
SWD 12V
-30V
37 BACK UP
BATT 1.2V X 3
03 T/S/M (TIMER)
CN10
IC2 Q3 Q4 Q5
BACK UP BATT
UNSW 5V
UNSW 12V
IC4
5V REG
03 T/M/S (MECHACON)
UNSW 12V
-30V
COUNT UP/DOWN
COUNT PULSE
STROBE
DATA 3
DATA 2
DATA 1
DATA 0
05 DISPLAY
CN1
Q5
RIPPLE FILTER
TO IC1 (-30V)
TO CN6 2PIN (-30V)
HR-D565E/EG only
To 38 VPS, CN3
CN11
RESET
BU 5V
POWER DOWN
BATT DOWN
IC1
RESET PULSEGEN
IC1 CPU
RESET
BATT DOWN
CNT UP
CNT PUS
MSTR
MECHACON BUS
DATA
-25V
UNSW 5V
R6
C4
IC1
OSC
CD & TIMING
PEAK HOLD (2CH, 12 DOT)
HIGH VOLTAGE DRIVER
GND(H)
GND
VDD
VDD(H)
CN5
CN7
CN4
CN8
GRIDS
GRIDS SIGNAL
Q2
Q1
D6
12G
CN3
CN9
SEGMENTS
SEGMENTS SIGNAL
LEVEL METER
Q3
Q4
AC 5.4V
CENTER TAP
D2
From 32 POWER TRANS, CN3
IC102 I/O PORT
BACK UP 5V
I/O EXP BUS
EXP KEY BUS IN
ADD3
ADD2
ADD1
ADD0
DATA3
DATA2
DATA1
DATA
BUS 3
BUS 2
BUS 1
BUS 0
IC103 TIMCLOCK CPU
OSCL
OSCO
X102 32.765Hz
CLOCK C104
C105
MEMBRANE SWITCH
KSS 2
KSS 5
KSS 6
KSS 7
KSS 10
KSS 11
KSS 12
KSS 13
KSS 1
KSS 0
TIMER SETTING BUTTONS
07 SWITCH
INSTANT REC
CH DOWN
CH UP
COMMON
04 TUNER/IF
TU STROBE
TU RESET
TU BUSY
BUSY
X101 4.194MHz
X2
X1
GND
STROBE
VPS BUS 0
VPS BUS 1
VPS BUS 2
VPS BUS 3
KEY MATRIX
TUNER SETTING BUTTONS
POWER DOWN
POWER OFF DET
INITIAL SW
CN501
35 PRESETTER
From/To 38 VPS CN2
HR-D565E/EG only
SUN MON TUE WED THU FRI SAT
START
TIMER
CLOCK
VPS
LAP COUNT
REC
STOP
REPEAT
DATE
TVPR
SET
SP
LP
dB -20 15 10 7 5 3 1 0 1 3 5 +8
A B C D E F G H
1 2 3 4 5

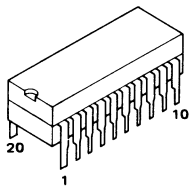
3.13 IC, TRANSISTOR AND DIODE FORMS

– IC –

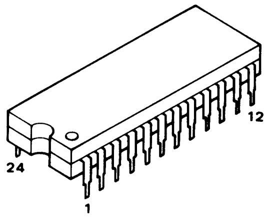
AN3926K



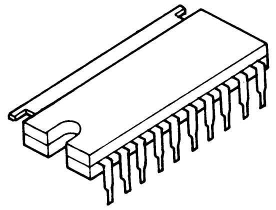
AN3991K



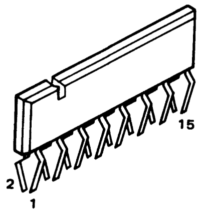
AN6671K



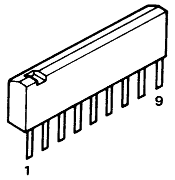
BA6238AU3



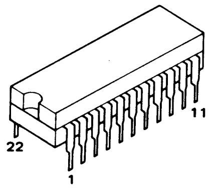
BA7007



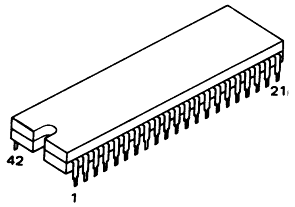
BA7021



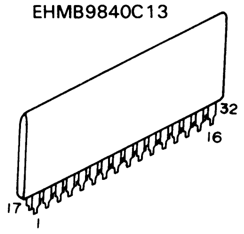
BA7057



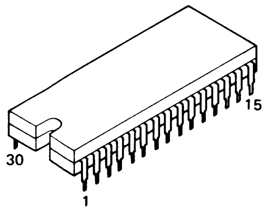
BU2710SA



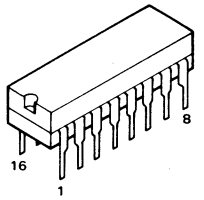
EHMB9840C13



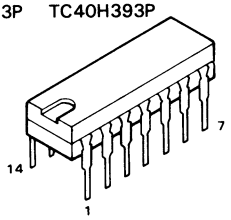
HA11839NT
HA12072NT
M50161-391SP
M51316BP
M51365SP



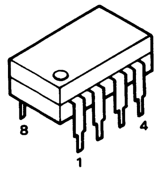
HA11752



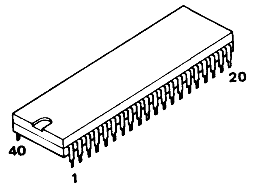
IR3702
LM339N
MC14517B
M5224P
M58653P
TC40H002P
TC40H020P
TC40H074P
TC40H386P
TC40H393P
TC4069UBP
UPC319C
UPC324C



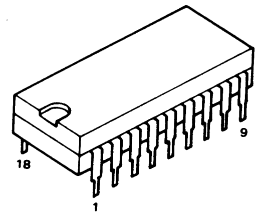
LM393P
UPC393C



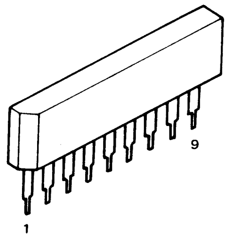
MSC1124BRS



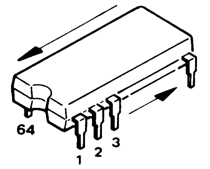
M50115AP
M51795P
RP5C15



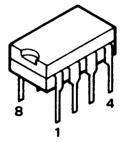
LA7225



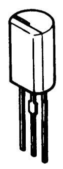
M50742-614SP



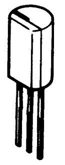
M5218P
M5223P



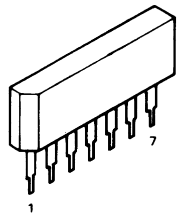
M5278L05
M5278L56



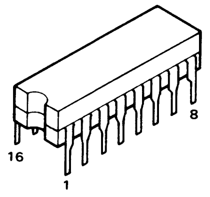
S-8053HLB
TA78L005AP



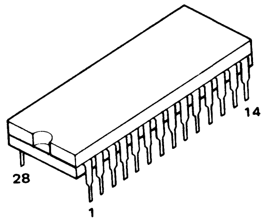
TA7361AP



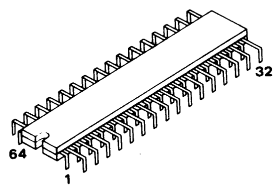
TC4538BP
UPD4053BP



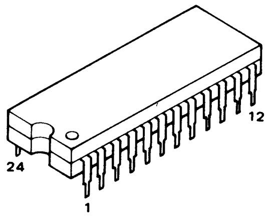
TDA3800GS
UPD7507SCT-209



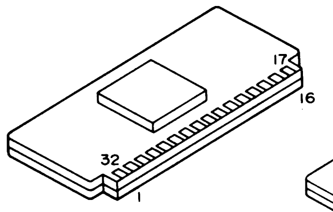
UPD7516H-016-36



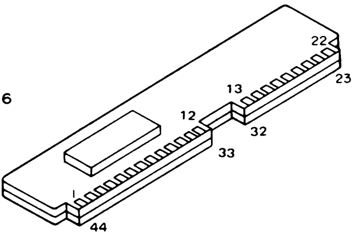
UPD82C43C



PU22046A

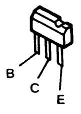


PU22199A

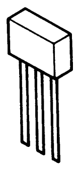

22
23
13
12
32
33
1
44

– Transistor –

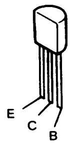
DTA114
DTA124
DTA144
DTC114
DTC124
DTC144
2SB911
2SC2021



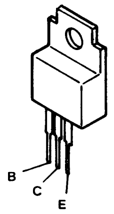
UN4112
UN4213



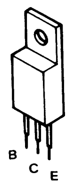
2SA564
2SB810



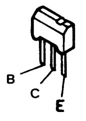
2SB1015
2SD1275



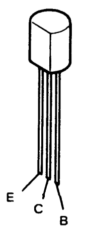
2SB1052
2SB941
2SD1128-08



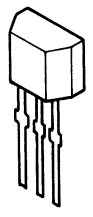
2SB641
2SB643
2SB644
2SC2636
2SC2647
2SD1330
2SD636
2SD637
2SD638



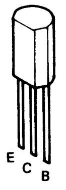
2SC1815
2SC2655
2SC2878



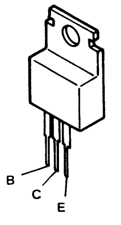
2SC2878
2SC3227



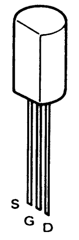
2SC3243



2SD1266
2SD1406

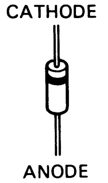


2SK381

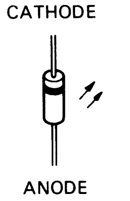


– Diode –

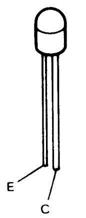
HZS5.1
HZT33
HZ12
HZ15
HZ6
HZ7
MA150
MA165
MA167
MA27
RD10
RD15
RD24
RD3.0
RD5.1
RD5.6
RD6.8
RD7.5
RD8.2
1SS132
1SS133
1SV68
10E2
11E2
20E2
30D2


CATHODE
ANODE

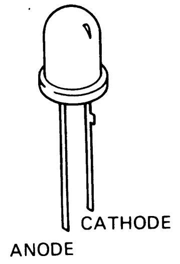
LTZ-R15
LTZ-MR15


CATHODE
ANODE

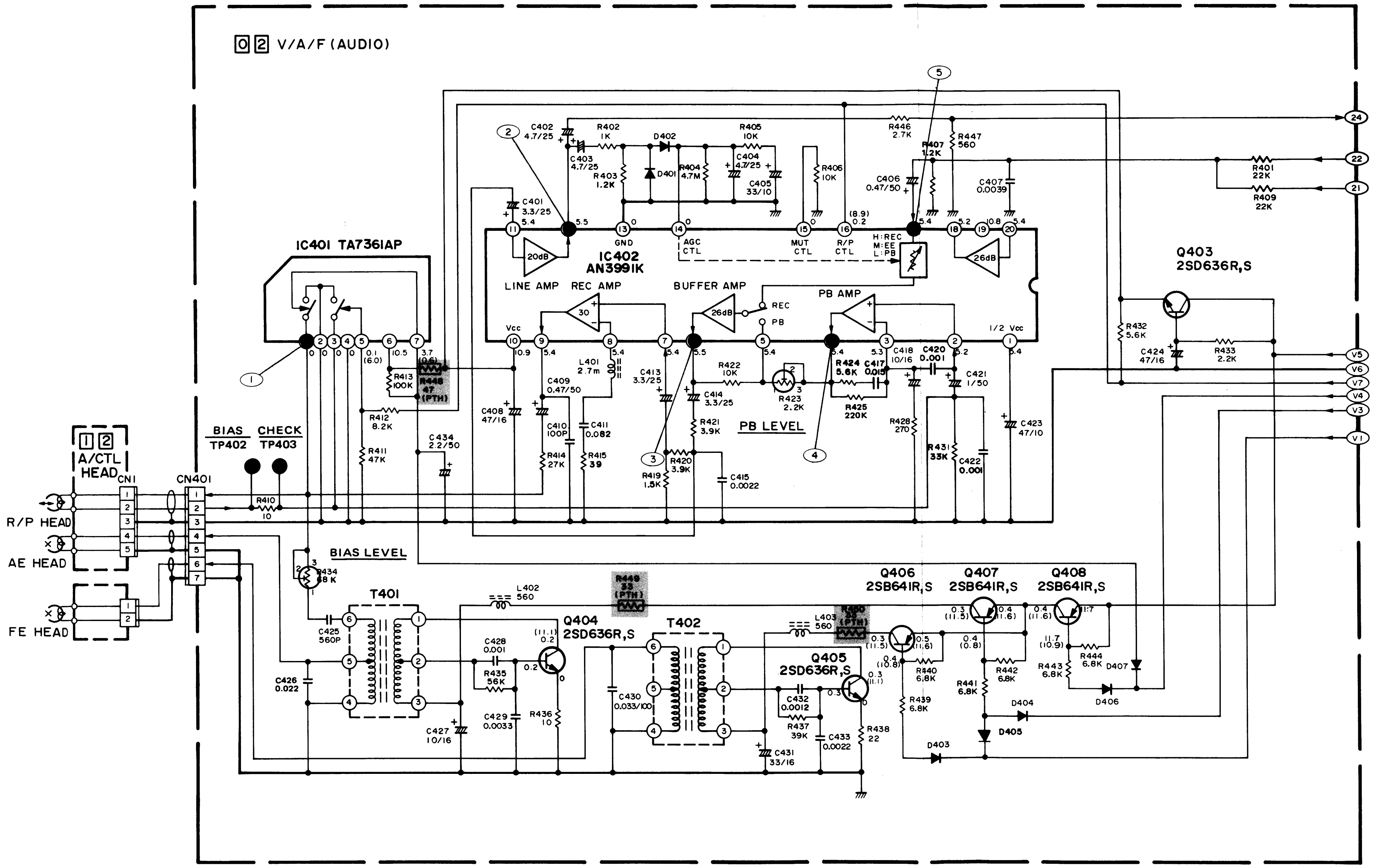
PT-352V
PN202SR



SLH-34
SLP-981C
SLR-34

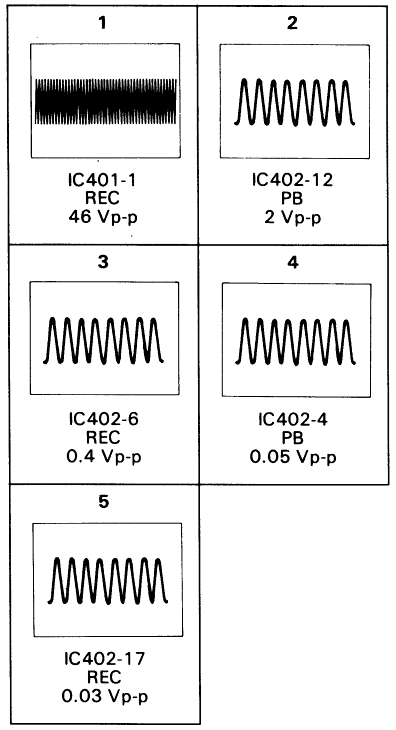

CATHODE
ANODE

3.14 AUDIO SCHEMATIC DIAGRAM

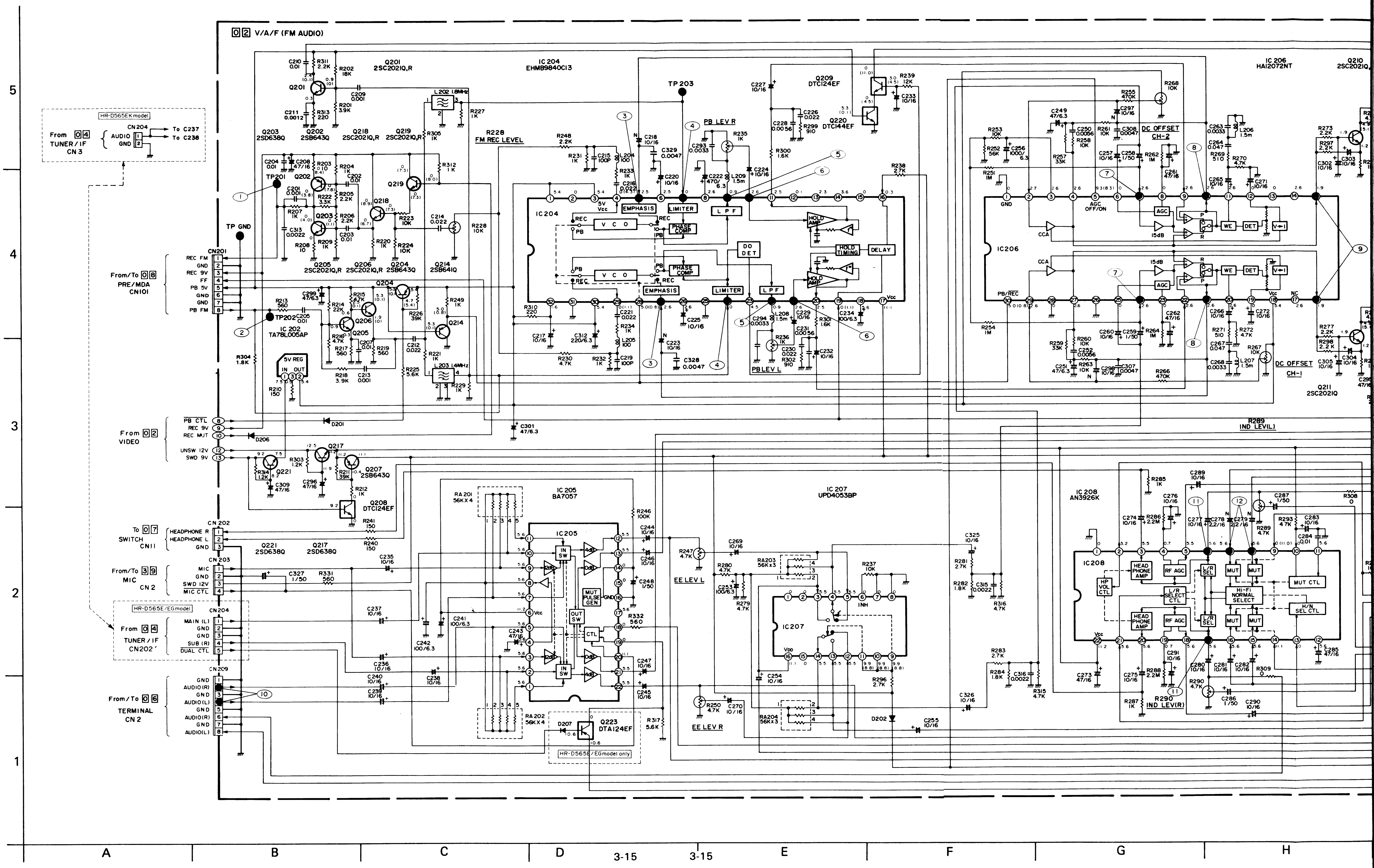

02 V/A/F (AUDIO)
IC401 TA7361AP
IC402 AN3991K
LINE AMP
REC AMP
BUFFER AMP
PB AMP
GND
AGC CTL
MUT CTL
R/P CTL
H:REC M:EE L:PB
1/2 Vcc
Vcc
20dB
26dB
30
REC
PB
PB LEVEL
BIAS LEVEL
BIAS CHECK
TP402 TP403
01 A/CTL HEAD
CN1
CN401
R/P HEAD
AE HEAD
FE HEAD
T401
T402
L402 560
L403 560
L401 2.7m
Q403 2SD636R,S
Q404 2SD636R,S
Q405 2SD636R,S
Q406 2SB641R,S
Q407 2SB641R,S
Q408 2SB641R,S
D401
D402
D403
D404
D405
D406
D407
R448 47 (PTH)
R449 33 (PTH)
R450 33 (PTH)
C402 4.7/25
C403 4.7/25
C401 3.3/25
R402 1K
R403 1.2K
R404 4.7M
R405 10K
C404 4.7/25
C405 33/10
R406 10K
R446 2.7K
R447 560
R407 1.2K
C406 0.47/50
C407 0.0039
R401 22K
R409 22K
R413 100K
R412 8.2K
R411 47K
R410 10
C434 2.2/50
C408 47/16
C409 0.47/50
C410 100P
C411 0.082
R414 27K
R415 39
C413 3.3/25
C414 3.3/25
R421 3.9K
R420 3.9K
R419 1.5K
C415 0.0022
R422 10K
R423 2.2K
R424 5.6K
C417 0.015
R425 220K
C418 10/16
C420 0.001
C421 1/50
R428 270
R431 33K
C422 0.001
C423 47/10
R432 5.6K
C424 47/16
R433 2.2K
R434 68K
C425 560P
C426 0.022
C428 0.001
R435 56K
C429 0.0033
C427 10/16
R436 10
C430 0.033/100
C432 0.0012
R437 39K
C433 0.0022
C431 33/16
R438 22
R439 6.8K
R440 6.8K
R441 6.8K
R442 6.8K
R443 6.8K
R444 6.8K
AUDIO
AUDIO (L)
AUDIO (R)
From / To 02 FMA
SWD 12V
GND
PB CTL
BIAS CTL
A DUB CTL
REC CTL
From 02 VIDEO

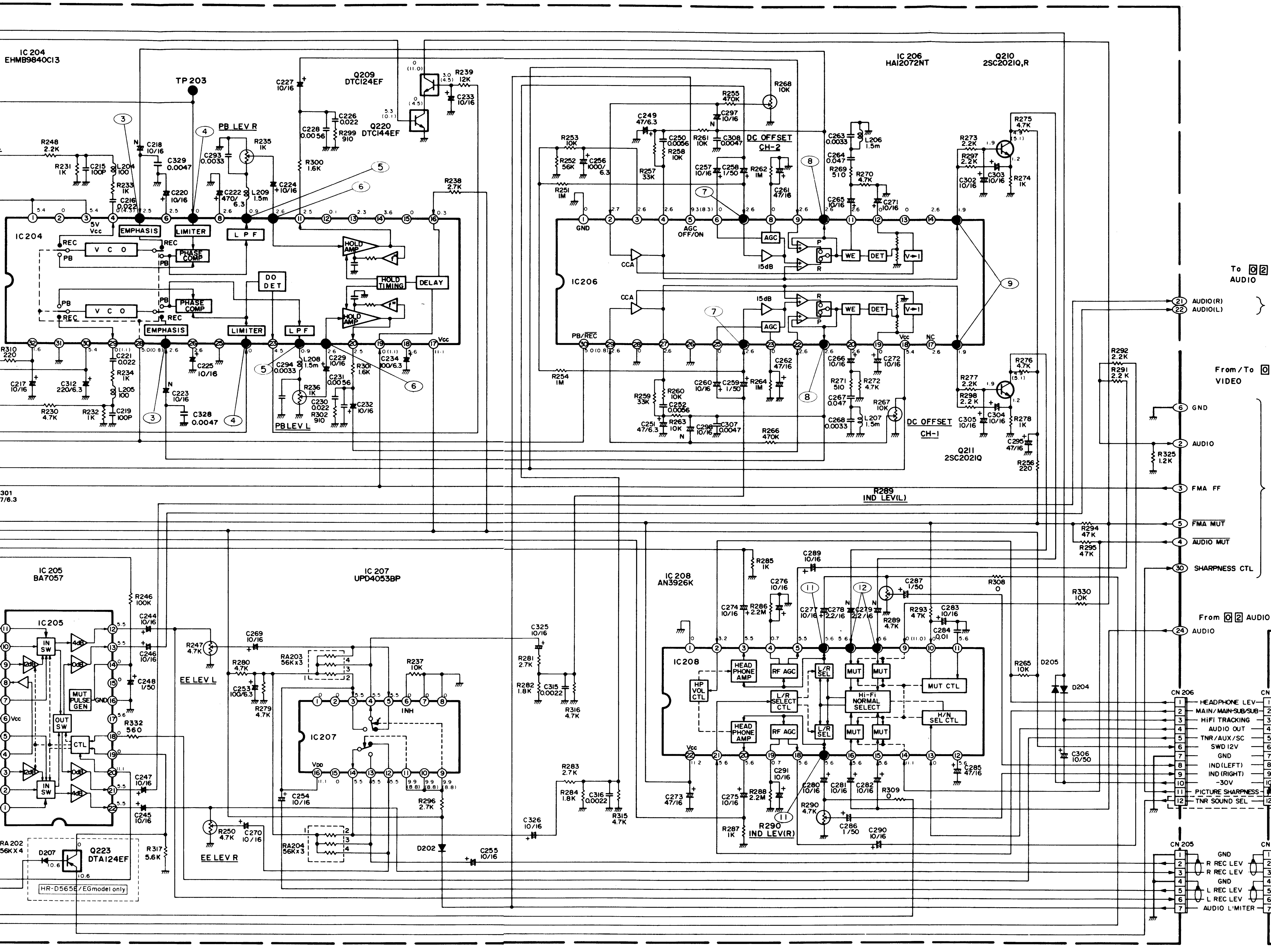
NOTE: Shaded (▨) parts are critical for safety. Replace only with specified part numbers.

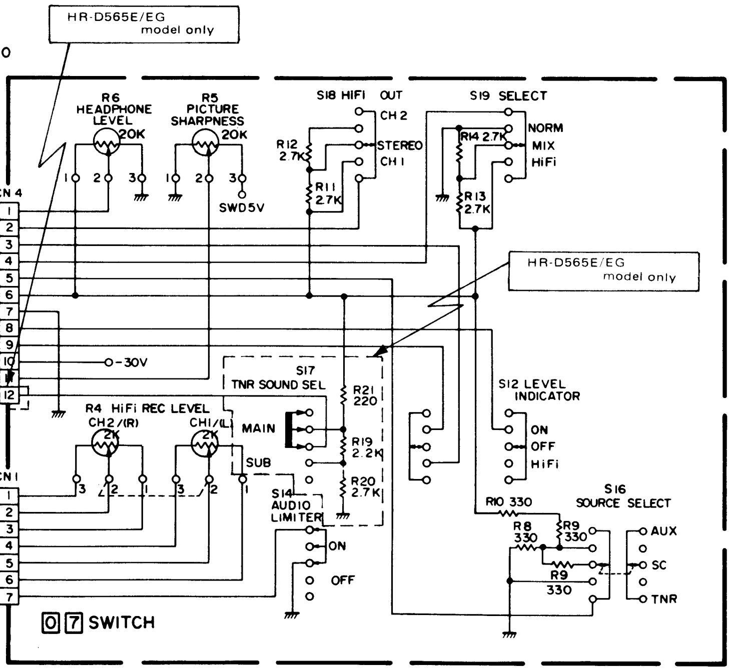
—Waveforms of AUDIO circuit—



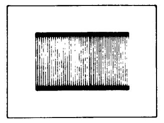
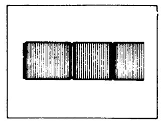
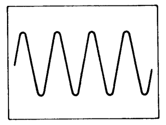
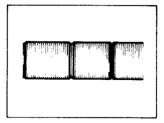
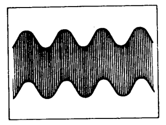
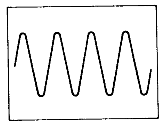
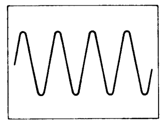
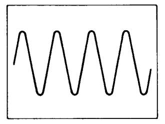
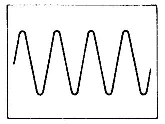
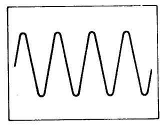
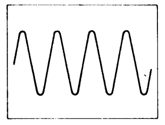
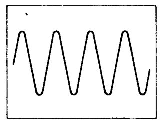
3.15 FM AUDIO SCHEMATIC DIAGRAM


02 V/A/F (FM AUDIO)
HR-D565EK model
From 04 TUNER / IF CN 3
CN204 AUDIO GND
To C237
To C238
From/To 08 PRE/MDA CN101
CN201 REC FM GND REC 9V FF PB 5V GND GND PB FM
TP GND
TP201
TP202
TP 203
IC 204 EHMB9840C13
IC 202 TA78L005AP
5V REG IN OUT
Q201 2SC2021Q,R
Q202 2SB643Q
Q203 2SD638Q
Q204 2SB643Q
Q205 2SC2021Q,R
Q206 2SC2021Q,R
Q214 2SB641Q
Q218 2SC2021Q,R
Q219 2SC2021Q,R
Q209 DTC124EF
Q220 DTC144EF
Q217 2SD638Q
Q221 2SD638Q
Q207 2SB643Q
Q208 DTC124EF
Q223 DTA124EF
Q210 2SC2021Q
Q211 2SC2021Q
L202 1.8MHz
L203 1.4MHz
R228 FM REC LEVEL
PB LEV R
PB LEV L
EMPHASIS
LIMITER
L P F
V C O
PHASE COMP
REC
PB
DO DET
HOLD AMP
HOLD TIMING
DELAY
IC 206 HA12072NT
DC OFFSET CH-2
DC OFFSET CH-1
AGC OFF/ON
AGC
CCA
15dB
WE
DET
V→I
PB/REC
R289 IND LEV(L)
R290 IND LEV(R)
From 02 VIDEO
PB CTL REC 9V REC MUT UNSW 12V SWD 9V
D201
D206
D202
D207
C301 47/6.3
To 07 SWITCH CN11
CN 202 HEADPHONE R HEADPHONE L GND
From/To 39 MIC CN 2
CN 203 MIC GND SWD 12V MIC CTL
HR-D565E/EG model
From 04 TUNER / IF CN202'
CN 204 MAIN (L) GND GND SUB (R) DUAL CTL
From/To 06 TERMINAL CN 2
CN 209 GND AUDIO(R) GND AUDIO(L) GND AUDIO(R) GND AUDIO(L)
RA201 56K×4
RA202 56K×4
RA203 56K×3
RA204 56K×3
IC 205 BA7057
IN SW
OUT SW
MUT PULSE GEN
CTL
4dB
Vcc
GND
HR-D565E/EG model only
IC 207 UPD4053BP
INH
VDD
EE LEV L
EE LEV R
IC 208 AN3926K
HP VOL CTL
HEAD PHONE AMP
RF AGC
L/R SEL
L/R SELECT CTL
MUT
Hi-Fi NORMAL SELECT
MUT CTL
H/N SEL CTL
A
B
C
D
E
F
G
H
1
2
3
4
5

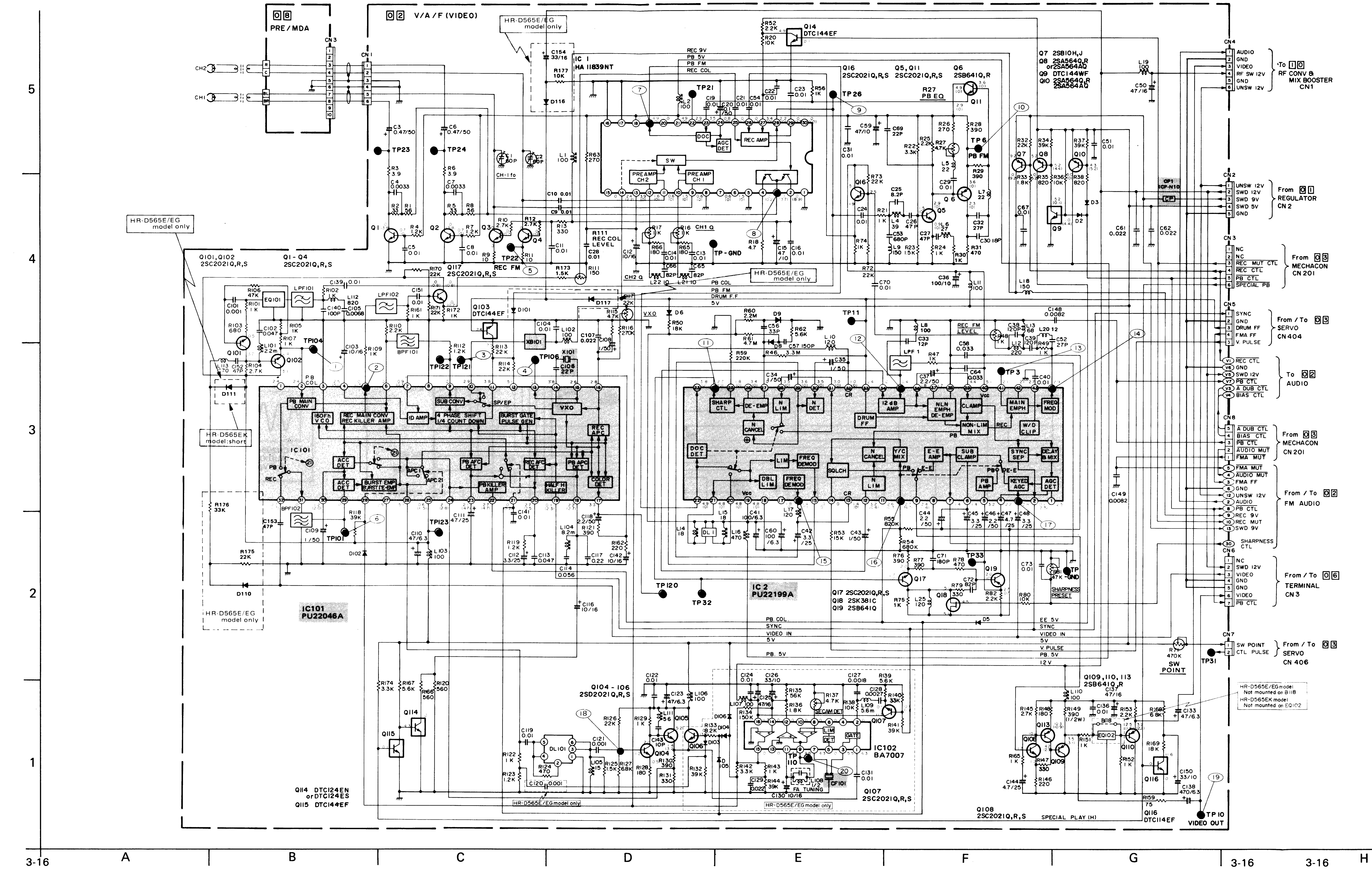

IC204
EHMB9840C13
TP203
Q209
DTC124EF
Q220
DTC144EF
IC206
HA12072NT
Q210
2SC2021Q,R
PB LEV R
DC OFFSET
CH-2
EMPHASIS
LIMITER
L P F
PHASE COMP
V C O
REC
PB
HOLD AMP
HOLD TIMING
DELAY
DO DET
IC206
GND
AGC OFF/ON
AGC
15dB
CCA
WE
DET
V→I
PB/REC
Vcc
NC
PB LEV L
DC OFFSET
CH-1
Q211
2SC2021Q
R289
IND LEV(L)
To 02 AUDIO
AUDIO(R)
AUDIO(L)
From/To 02 VIDEO
GND
AUDIO
FMA FF
FMA MUT
AUDIO MUT
SHARPNESS CTL
From 02 AUDIO
AUDIO
IC205
BA7057
IN SW
OUT SW
MUT PULSE GEN
CTL
EE LEV L
EE LEV R
IC207
UPD4053BP
INH
RA203 56K×3
RA204 56K×3
IC208
AN3926K
HP VOL CTL
HEAD PHONE AMP
RF AGC
L/R SEL
MUT
L/R SELECT CTL
Hi-Fi NORMAL SELECT
MUT CTL
H/N SEL CTL
R290
IND LEV(R)
D205
D204
D202
Q223
DTA124EF
D207
HR-D565E/EG model only
CN206
CN4
HEADPHONE LEV
MAIN/MAIN-SUB/SUB
HiFi TRACKING
AUDIO OUT
TNR/AUX/SC
SWD 12V
GND
IND(LEFT)
IND(RIGHT)
-30V
PICTURE SHARPNESS
TNR SOUND SEL
CN205
CN1
GND
R REC LEV
R REC LEV
GND
L REC LEV
L REC LEV
AUDIO L'MITER

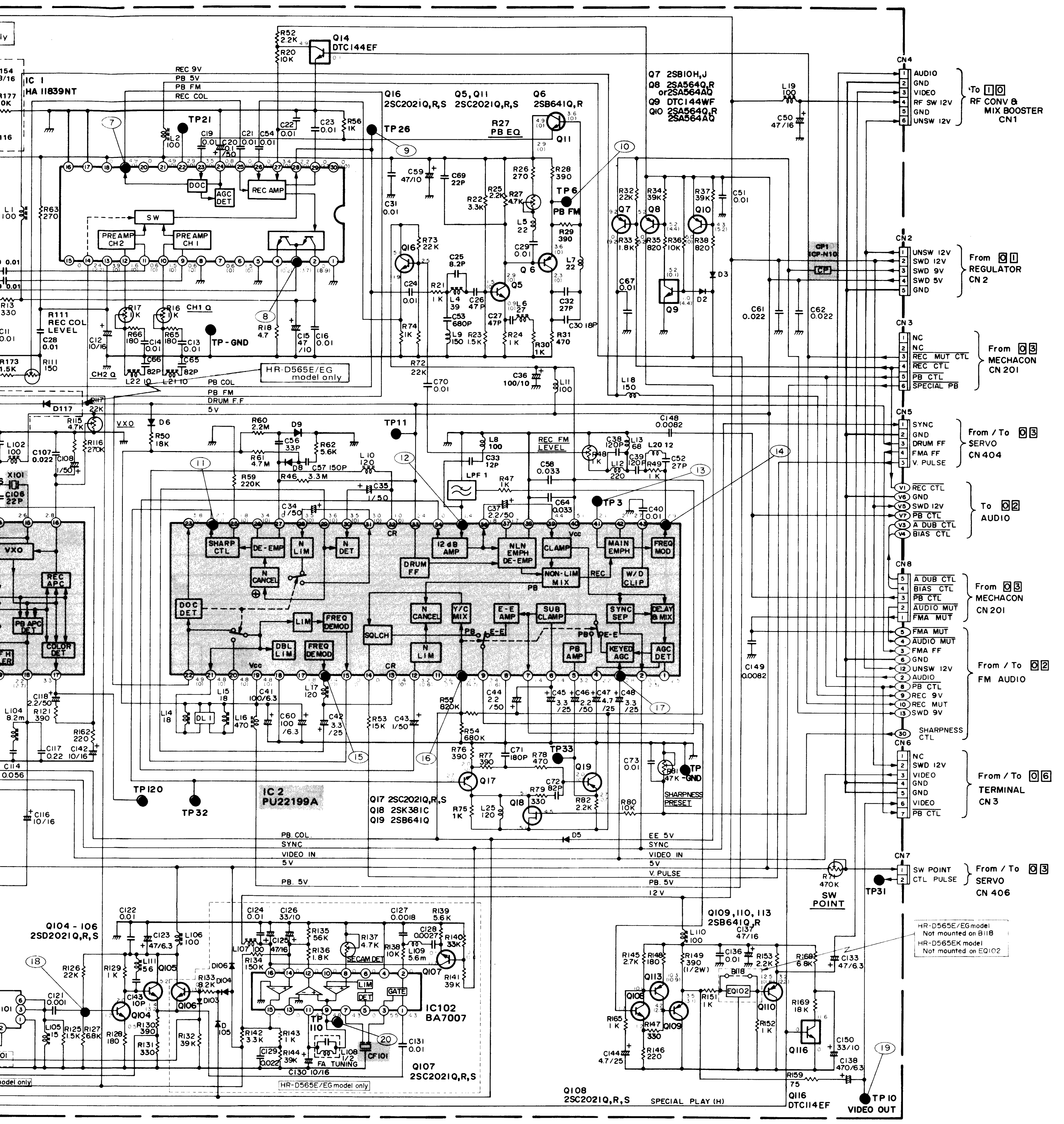

HR-D565E/EG model only
R6 HEADPHONE LEVEL 20K
R5 PICTURE SHARPNESS 20K
SWD5V
S18 HIFI OUT
CH 2
STEREO
CH 1
S19 SELECT
NORM
MIX
HiFi
HR-D565E/EG model only
-30V
R4 HiFi REC LEVEL
CH2(R)
CH1(L)
MAIN
SUB
S17 TNR SOUND SEL
S14 AUDIO LIMITER
ON
OFF
S12 LEVEL INDICATOR
ON
OFF
HiFi
S16 SOURCE SELECT
AUX
SC
TNR
07 SWITCH

—Waveforms of FM AUDIO circuit—

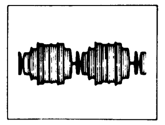
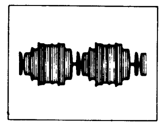
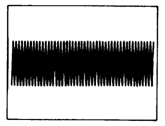
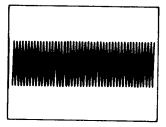
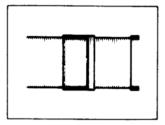
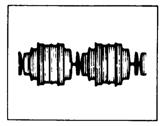
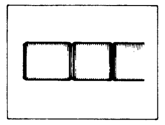
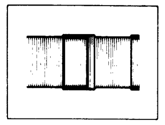
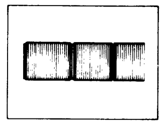
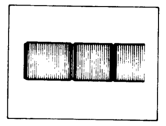
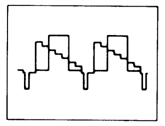
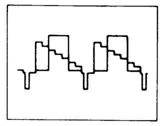
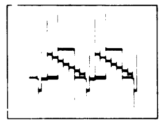
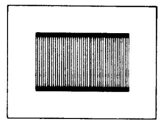
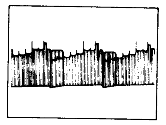
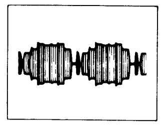
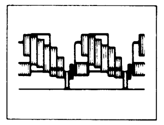
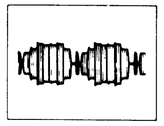
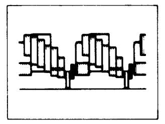
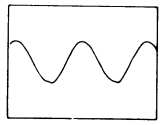
1	2	3
 TP201 REC 2.1 Vp-p	 TP202 PB 0.2 Vp-p	 IC204-5,27 REC 0.18 Vp-p
4	5	6
 IC204-7,24 PB 0.08 Vp-p	 IC204-9,22 PB 0.3 Vp-p	 IC204-10,21 PB 0.05 Vp-p
7	8	9
 IC206-7,24 REC 0.01 Vp-p	 IC206-10,21 REC 0.2 Vp-p	 IC206-15,16 REC 0.04 Vp-p
10	11	12
 CN209-2,4 AUDIO IN 0.2 Vp-p	 IC208-6,17 REC 0.14 Vp-p	 IC208-7,8 0.05 Vp-p

3.16 VIDEO SCHEMATIC DIAGRAM


08 PRE/MDA
02 V/A/F (VIDEO)
CH2
CH1
CN3
CN1
HR-D565E/EG model only
C154 33/16
R177 10K
D116
IC 1 HA 11839NT
REC 9V
PB 5V
PB FM
REC COL
R52 2.2K
R20 10K
Q14 DTC144EF
TP21
TP26
Q16 2SC2021Q,R,S
Q5,Q11 2SC2021Q,R,S
Q6 2SB641Q,R
R27 PB EQ
Q7 2SB810H,J
Q8 2SA564Q,R or 2SA564AQ
Q9 DTC144WF
Q10 2SA564Q,R 2SA564AQ
CN4
AUDIO
GND
VIDEO
RF SW 12V
GND
UNSW 12V
To 10 RF CONV & MIX BOOSTER CN1
CN2
UNSW 12V
SWD 12V
SWD 9V
SWD 5V
GND
From 01 REGULATOR CN 2
CP1 ICP-N10
CN3
NC
NC
REC MUT CTL
REC CTL
PB CTL
SPECIAL PB
From 03 MECHACON CN 201
CN5
SYNC
GND
DRUM FF
FMA FF
V. PULSE
From / To 03 SERVO CN 404
REC CTL
GND
SWD 12V
PB CTL
A DUB CTL
BIAS CTL
To 02 AUDIO
CN8
A DUB CTL
BIAS CTL
PB CTL
AUDIO MUT
FMA MUT
From 03 MECHACON CN 201
FMA MUT
AUDIO MUT
FMA FF
GND
UNSW 12V
AUDIO
PB CTL
REC 9V
REC MUT
SWD 9V
From / To 02 FM AUDIO
SHARPNESS CTL
CN6
NC
SWD 12V
VIDEO
GND
GND
VIDEO
PB CTL
From / To 06 TERMINAL CN3
CN7
SW POINT
CTL PULSE
From / To 03 SERVO CN 406
SW POINT
TP31
TP23
TP24
CH-1 fo
DOC
AGC DET
REC AMP
SW
PREAMP CH2
PREAMP CH1
CH1 Q
CH2 Q
TP-GND
R111 REC COL LEVEL
REC FM
TP22
TP6
PB FM
HR-D565E/EG model only
Q101,Q102 2SC2021Q,R,S
Q1-Q4 2SC2021Q,R,S
Q117 2SC2021Q,R,S
Q103 DTC144EF
EQ101
LPF101
LPF102
BPF101
XB101
X101
D117
VXO
TP104
TP122
TP121
TP106
HR-D565EK model:short
PB MAIN CONV
160Fh V.C.O
REC MAIN CONV REC KILLER AMP
ID AMP
SUB CONV
4 PHASE SHIFT 1/4 COUNT DOWN
BURST GATE PULSE GEN
SP/EP
VXO
REC APC
IC101
ACC DET
ACC DET
BURST EMP BURSTIE-EMP
APC1
APC2
PB AFC DET
PB KILLER AMP
REC AFC DET
PB APC DET
HALF H KILLER
COLOR DET
PB
REC
BPF102
TP101
TP123
D102
D110
HR-D565E/EG model only
IC101 PU22046A
TP11
REC FM LEVEL
LPF 1
TP3
SHARP CTL
DE-EMP
N LIM
N DET
DRUM FF
12 dB AMP
NLN EMPH DE-EMP
CLAMP
MAIN EMPH
FREQ MOD
N CANCEL
NON-LIM MIX
REC
W/D CLIP
DOC DET
LIM
FREQ DEMOD
N CANCEL
Y/C MIX
E-E AMP
SUB CLAMP
SYNC SEP
DELAY & MIX
SQLCH
DBL LIM
FREQ DEMOD
N LIM
PB AMP
KEYED AGC
AGC DET
PB
E-E
PB
E-E
CR
Vcc
DL1
TP120
TP32
IC 2 PU22199A
Q17 2SC2021Q,R,S
Q18 2SK381C
Q19 2SB641Q
TP33
TP-GND
SHARPNESS PRESET
PB COL
SYNC
VIDEO IN
5V
PB. 5V
EE 5V
SYNC
VIDEO IN
5V
V. PULSE
PB. 5V
12 V
D5
Q114
Q115
Q114 DTC124EN or DTC124ES
Q115 DTC144EF
Q104-106 2SD2021Q,R,S
DL101
Q104
Q105
Q106
HR-D565E/EG model only
SECAM DET
LIM DET
GATE
IC102 BA7007
TP110
CF101
FA TUNING
Q107
Q107 2SC2021Q,R,S
HR-D565E/EG model only
Q109,110,113 2SB641Q,R
Q108
Q113
Q109
Q110
Q116
EQ102
B118
HR-D565E/EG model Not mounted on B118
HR-D565EK model Not mounted on EQ102
Q108 2SC2021Q,R,S
SPECIAL PLAY (H)
Q116 DTC114EF
TP10 VIDEO OUT
A
B
C
D
E
F
G
H
1
2
3
4
5

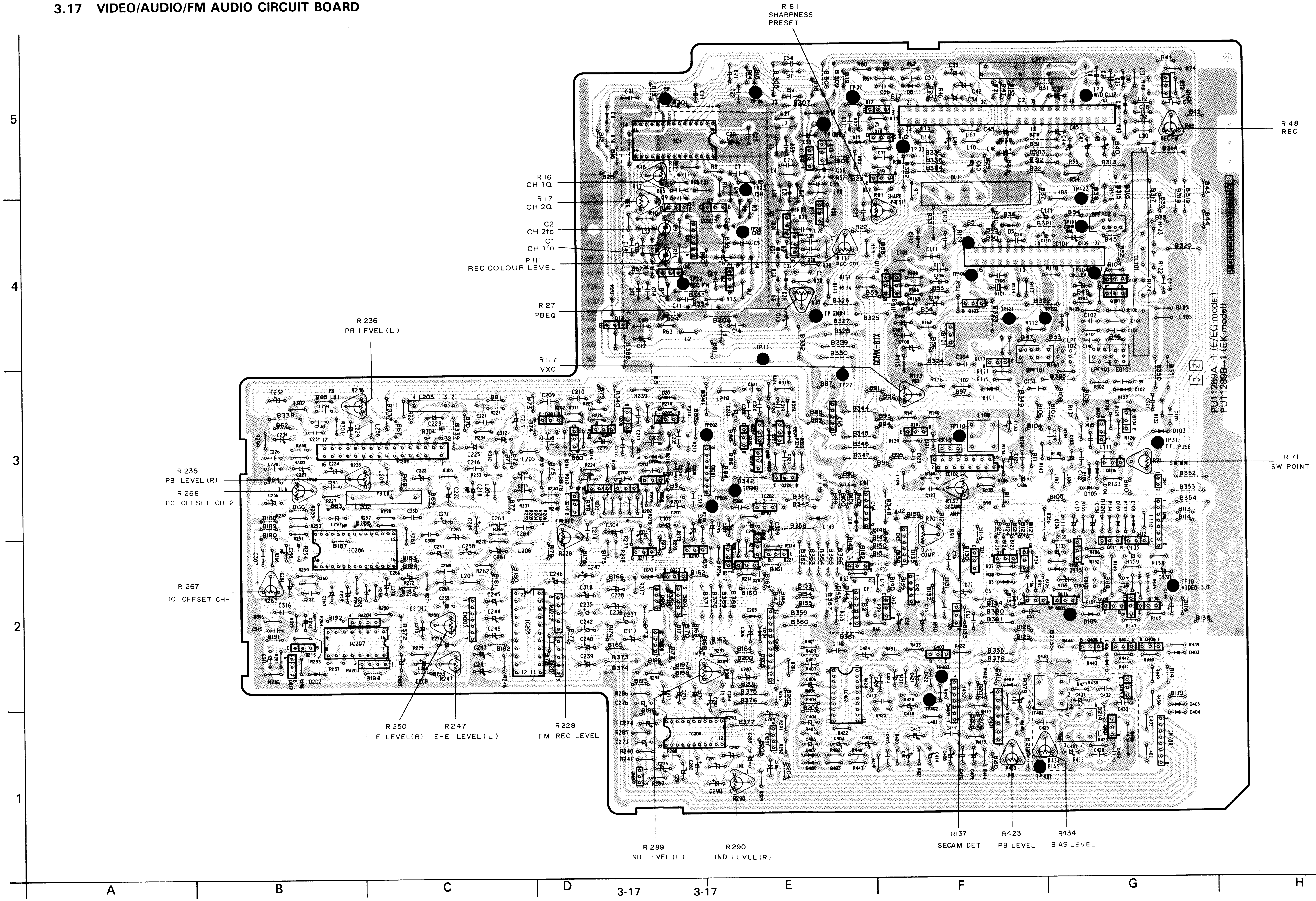

IC 1
HA 11839NT
Q14
DTC144EF
REC 9V
PB 5V
PB FM
REC COL
TP21
TP26
TP6
PB FM
TP-GND
TP11
TP3
TP33
TP120
TP32
TP 110
TP31
TP 10
VIDEO OUT
DOC
AGC DET
REC AMP
SW
PREAMP CH2
PREAMP CH1
R111 REC COL LEVEL
CH1 Q
CH2 Q
HR-D565E/EG model only
Q16 2SC2021Q,R,S
Q5,Q11 2SC2021Q,R,S
Q6 2SB641Q,R
R27 PB EQ
Q7 2SB10H,J
Q8 2SA564Q,R or 2SA564AQ
Q9 DTC144WF
Q10 2SA564Q,R 2SA564AQ
CP1 ICP-N10
VXO
REC APC
PB APC DET
COLOR DET
SHARP CTL
DE-EMP
N LIM
N DET
N CANCEL
12 dB AMP
NLN EMPH DE-EMP
CLAMP
MAIN EMPH
FREQ MOD
DRUM FF
NON-LIM MIX
W/D CLIP
DOC DET
LIM
FREQ DEMOD
DBL LIM
SQLCH
N CANCEL
Y/C MIX
E-E AMP
SUB CLAMP
SYNC SEP
DELAY & MIX
N LIM
PB AMP
KEYED AGC
AGC DET
REC FM LEVEL
LPF 1
IC 2
PU22199A
Q17 2SC2021Q,R,S
Q18 2SK381C
Q19 2SB641Q
SHARPNESS PRESET
PB COL
SYNC
VIDEO IN
5V
PB 5V
EE 5V
V PULSE
12 V
Q104 - 106
2SD2021Q,R,S
IC102
BA7007
SECAM DET
LIM DET
GATE
FA TUNING
CF101
Q107
2SC2021Q,R,S
HR-D565E/EG model only
Q109,110,113
2SB641Q,R
EQ102
B118
Q108
2SC2021Q,R,S
SPECIAL PLAY (H)
Q116
DTC114EF
SW POINT
HR-D565E/EG model Not mounted on B118
HR-D565EK model Not mounted on EQ102
CN4
AUDIO
GND
VIDEO
RF SW 12V
GND
UNSW 12V
To 10 RF CONV & MIX BOOSTER CN1
CN2
UNSW 12V
SWD 12V
SWD 9V
SWD 5V
GND
From 01 REGULATOR CN2
CN3
NC
NC
REC MUT CTL
REC CTL
PB CTL
SPECIAL PB
From 03 MECHACON CN 201
CN5
SYNC
GND
DRUM FF
FMA FF
V. PULSE
From / To 03 SERVO CN404
REC CTL
GND
SWD 12V
PB CTL
A DUB CTL
BIAS CTL
To 02 AUDIO
CN8
A DUB CTL
BIAS CTL
PB CTL
AUDIO MUT
FMA MUT
From 03 MECHACON CN 201
FMA MUT
AUDIO MUT
FMA FF
GND
UNSW 12V
AUDIO
PB CTL
REC 9V
REC MUT
SWD 9V
SHARPNESS CTL
From / To 02 FM AUDIO
CN6
NC
SWD 12V
VIDEO
GND
GND
VIDEO
PB CTL
From / To 06 TERMINAL CN3
CN7
SW POINT
CTL PULSE
From / To 03 SERVO CN 406
D
E
F
G
H
I
J
K

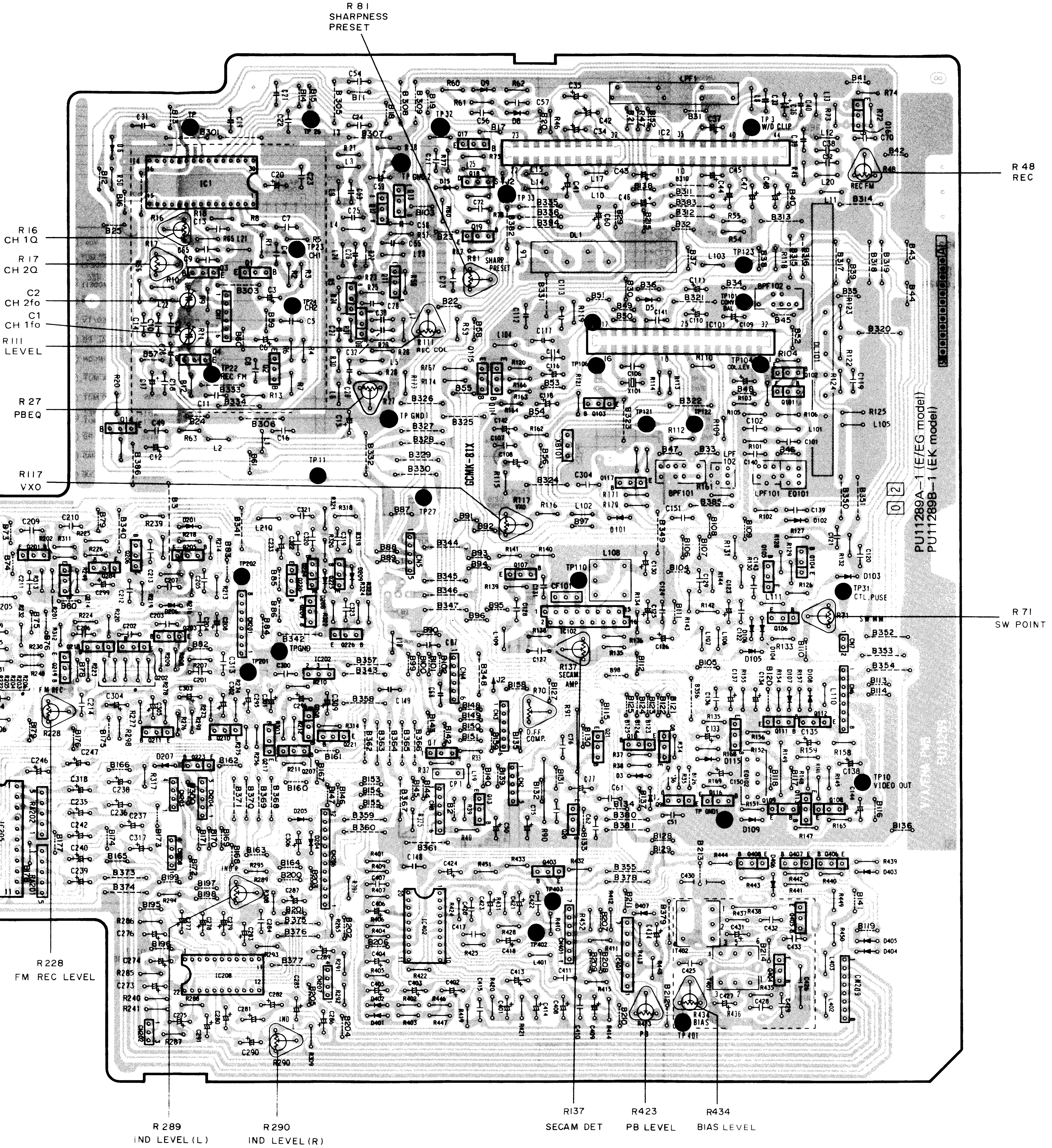
—Waveforms of Video circuit—

1  TP104 PB COLOUR 0.23 Vp-p PB	2  IC101-5 1.0 Vp-p REC	3  TP121 3.5 Vp-p (4.43 MHz)	4  TP106 Fsc 0.6 Vp-p
5  TP22 REC FM 0.15 Vp-p REC	6  TP101 COLOUR SIG 0.38 Vp-p (REC) 0.2 Vp-p (PB)	7  IC1-19 PB FM 0.4 Vp-p PB	8  IC1-3 REC FM 4.2 Vp-p REC
9  TP26 PB FM 0.4 Vp-p PB	10  TP6 PB FM 0.15 Vp-p PB	11  IC2-24 PB Y 0.24 Vp-p PB	12  IC2-35 Y. SIGNAL 0.28 Vp-p
13  TP3 EMPHASIS 0.7 Vp-p E-E	14  IC2-44 FM 1.0 Vp-p E-E	15  IC2-16 DEMOD OUT 0.5 Vp-p PB	16  IC2-10 0.4 Vp-p PB
17  IC2-3 VIDEO IN 1.0 Vp-p	18  Q104-B 0.12 Vp-p	19  TP10 VIDEO OUT 1.0 Vp-p	20  TP110 SECAM DET 0.05 Vp-p

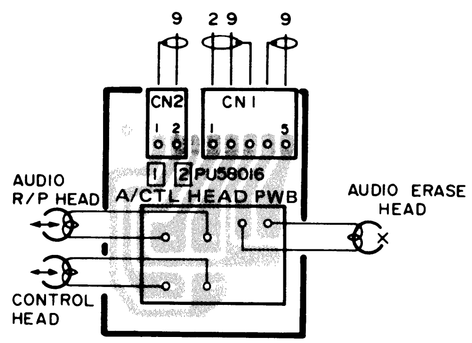
NOTE: Shaded (▨) parts are critical for safety. Replace only with specified part numbers.

3.17 VIDEO/AUDIO/FM AUDIO CIRCUIT BOARD

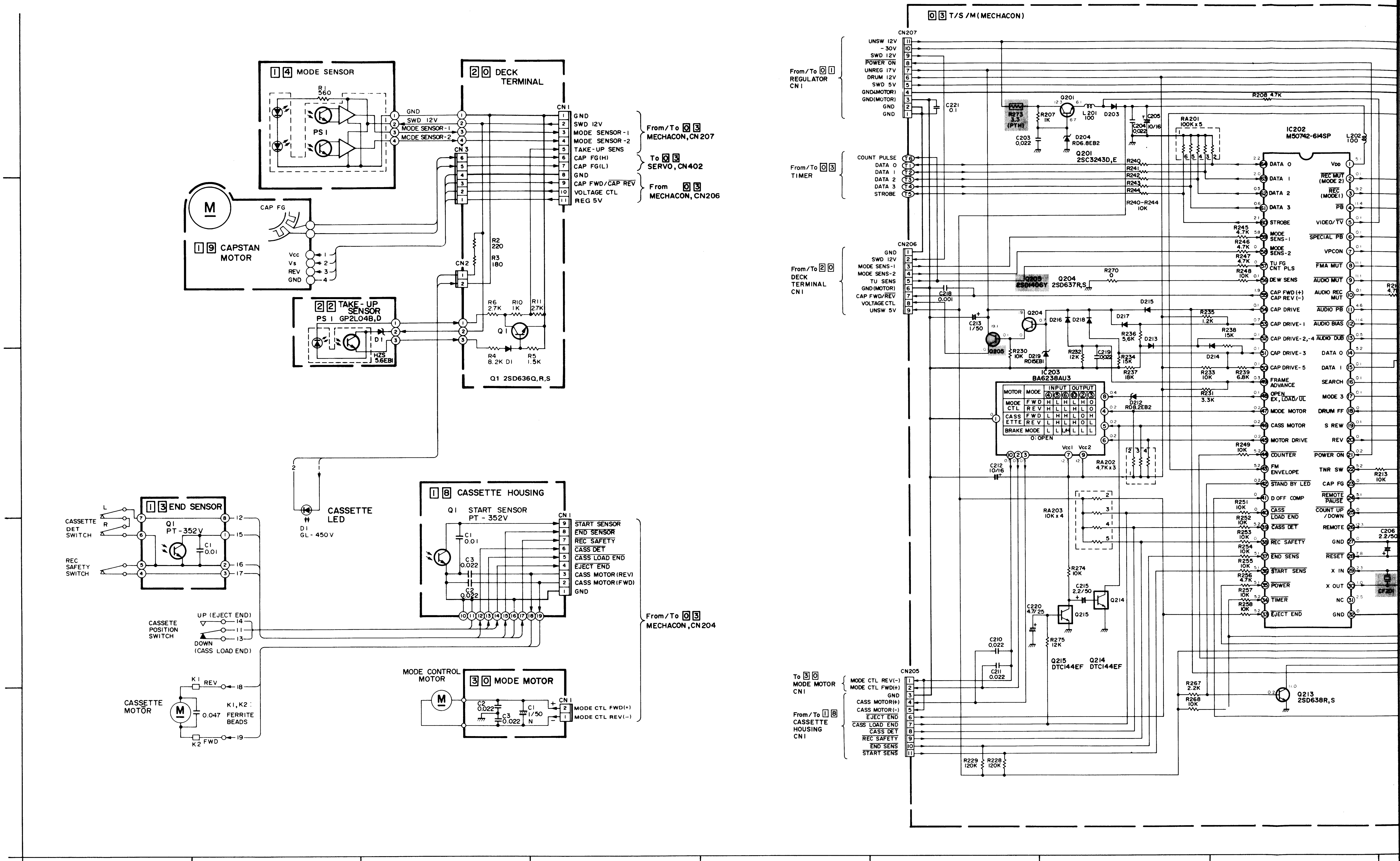

R 81
SHARPNESS
PRESET
R 48
REC
R 16
CH 1Q
R 17
CH 2Q
C2
CH 2fo
C1
CH 1fo
R 111
REC COLOUR LEVEL
R 27
PBEQ
R 236
PB LEVEL (L)
R117
VXO
R 71
SW POINT
R 235
PB LEVEL (R)
R 268
DC OFFSET CH-2
R 267
DC OFFSET CH-1
R 250
E-E LEVEL(R)
R 247
E-E LEVEL(L)
R 228
FM REC LEVEL
R 289
IND LEVEL(L)
R 290
IND LEVEL(R)
R137
SECAM DET
R423
PB LEVEL
R434
BIAS LEVEL
PU11289A-1 (E/EG model)
PU11289B-1 (EK model)
TP3 W/D CLIP
TP31 CTL PULSE
TP10 VIDEO OUT
5
4
3
2
1
A
B
C
D
E
F
G
H

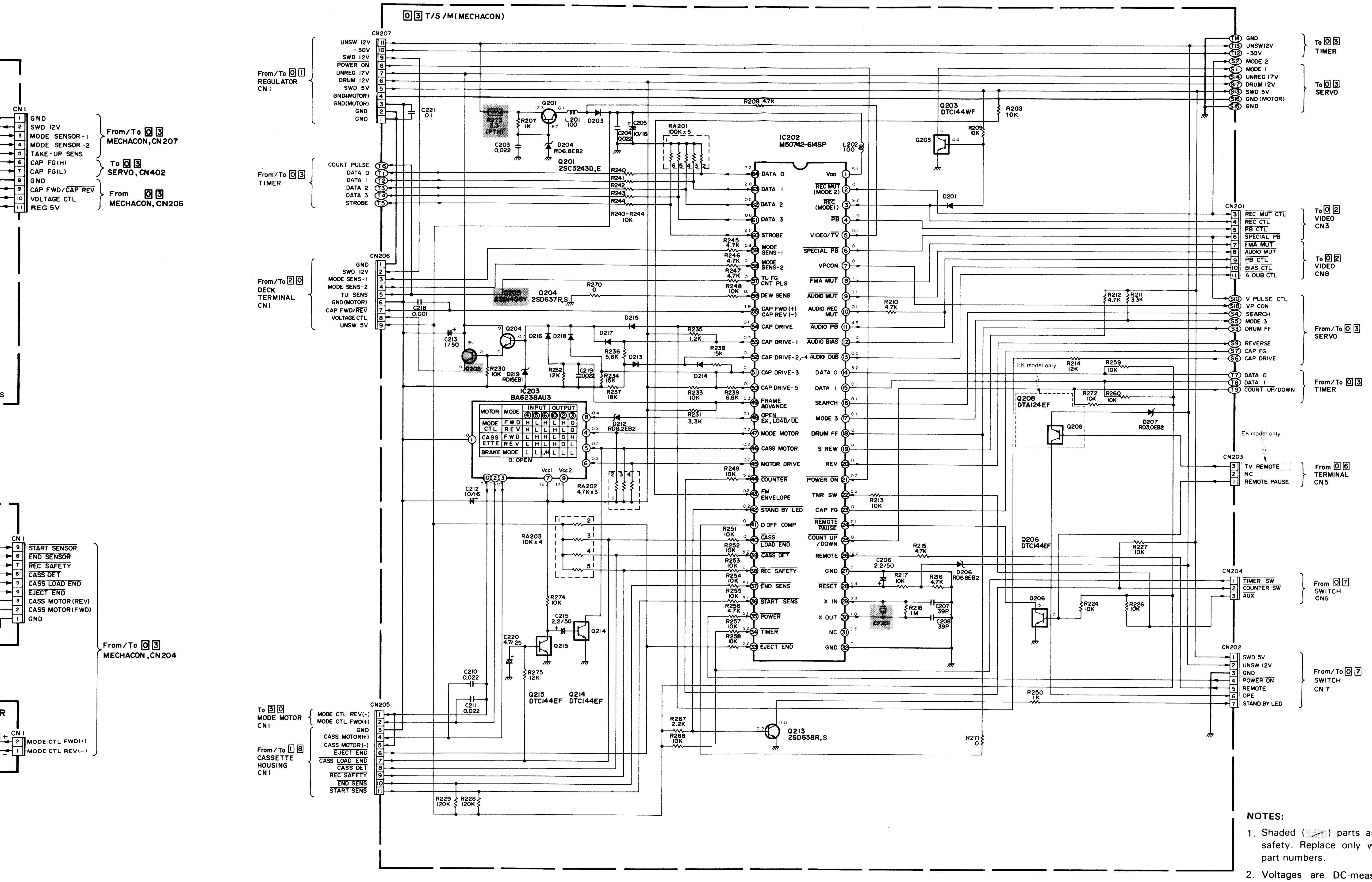

R 81
SHARPNESS
PRESET
R 48
REC
R 16
CH 1Q
R 17
CH 2Q
C2
CH 2fo
C1
CH 1fo
R111
LEVEL
R 27
PBEQ
R117
VXO
R 71
SW POINT
PU11289A-1 (E/EG model)
PU11289B-1 (EK model)
R 228
FM REC LEVEL
R 289
IND LEVEL (L)
R 290
IND LEVEL (R)
R137
SECAM DET
R423
PB LEVEL
R434
BIAS LEVEL

—AUDIO/CONTROL HEAD—


9
2 9
9
CN2
CN1
1 2
1
5
1
2
PU58016
A/CTL HEAD PWB
AUDIO
R/P HEAD
AUDIO ERASE
HEAD
CONTROL
HEAD

3.18 MECHANISM CONTROL SCHEMATIC DIAGRAM

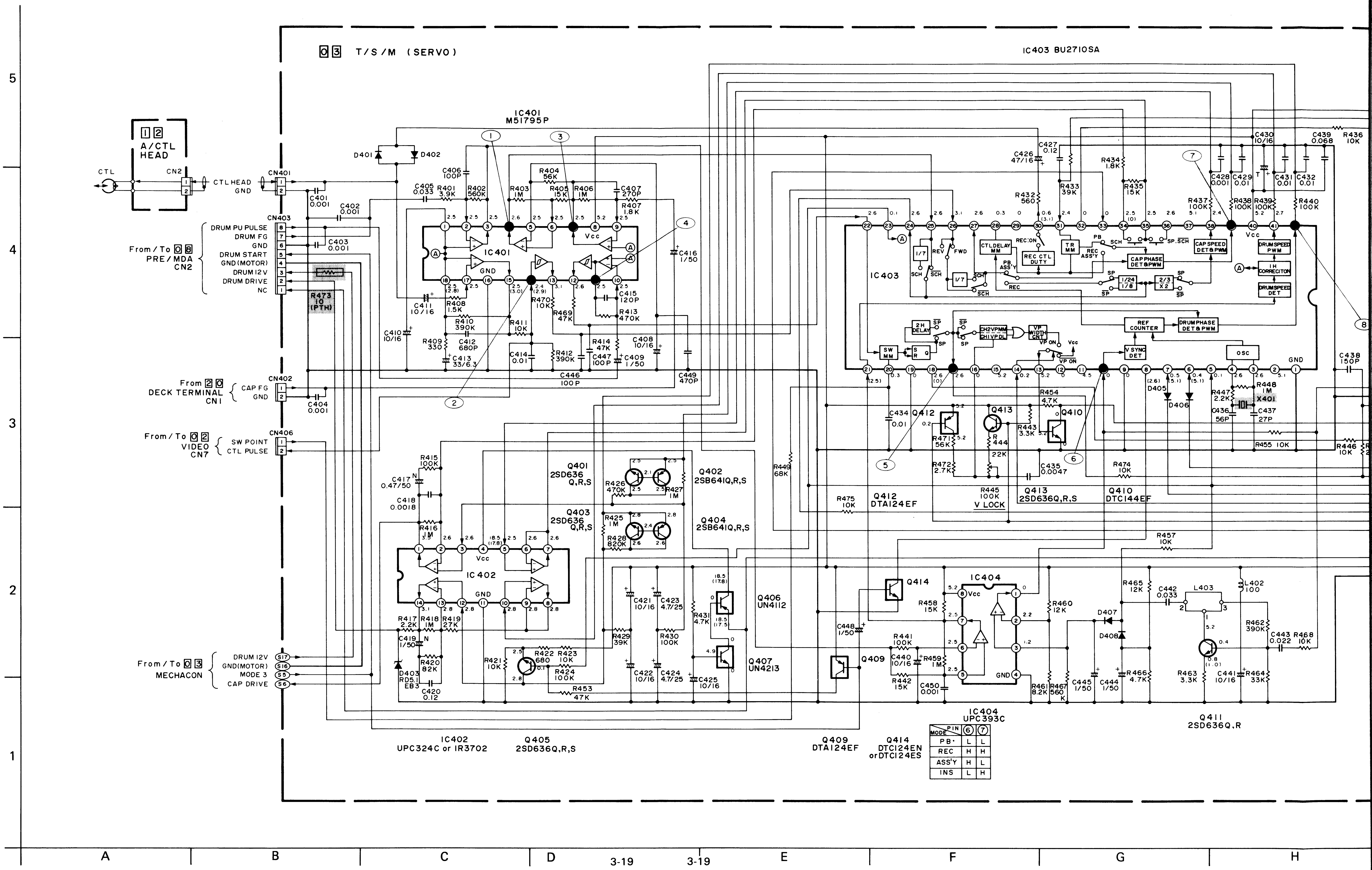

14 MODE SENSOR
R1 560
PS1
GND
SWD 12V
MODE SENSOR-1
MODE SENSOR-2
19 CAPSTAN MOTOR
CAP FG
Vcc
Vs
REV
GND
20 DECK TERMINAL
CN1
CN3
CN2
GND
SWD 12V
MODE SENSOR-1
MODE SENSOR-2
TAKE-UP SENS
CAP FG(H)
CAP FG(L)
GND
CAP FWD/CAP REV
VOLTAGE CTL
REG 5V
From/To 03 MECHACON, CN207
To 03 SERVO, CN402
From 03 MECHACON, CN206
R2 220
R3 180
R6 2.7K
R10 1K
R11 2.7K
R4 8.2K D1
R5 1.5K
Q1 2SD636Q,R,S
22 TAKE-UP SENSOR
PS1 GP2L04B,D
D1 HZS 5.6EB1
CASSETTE LED
D1 GL-450V
13 END SENSOR
Q1 PT-352V
C1 0.01
CASSETTE DET SWITCH
REC SAFETY SWITCH
CASSETE POSITION SWITCH
UP (EJECT END)
DOWN (CASS LOAD END)
18 CASSETTE HOUSING
Q1 START SENSOR PT-352V
C1 0.01
C3 0.022
C2 0.022
START SENSOR
END SENSOR
REC SAFETY
CASS DET
CASS LOAD END
EJECT END
CASS MOTOR(REV)
CASS MOTOR(FWD)
GND
From/To 03 MECHACON, CN204
CASSETTE MOTOR
K1 REV
K2 FWD
0.047
K1, K2: FERRITE BEADS
MODE CONTROL MOTOR
30 MODE MOTOR
C2 0.022
C3 0.022
C1 1/50 N
MODE CTL FWD(+)
MODE CTL REV(-)
03 T/S/M(MECHACON)
CN207
UNSW 12V
-30V
SWD 12V
POWER ON
UNREG 17V
DRUM 12V
SWD 5V
GND(MOTOR)
GND(MOTOR)
GND
GND
From/To 01 REGULATOR CN1
C221 0.1
R273 3.3 (PTH)
R207 1K
Q201
L201 100
D203
C203 0.022
D204 RD6.8EB2
Q201 2SC3243D,E
C205 10/16
C204 0.022
R208 4.7K
RA201 100K x 5
IC202 M50742-614SP
L202 100
COUNT PULSE
DATA 0
DATA 1
DATA 2
DATA 3
STROBE
From/To 03 TIMER
R240-R244 10K
CN206
GND
SWD 12V
MODE SENS-1
MODE SENS-2
TU SENS
GND(MOTOR)
CAP FWD/REV
VOLTAGE CTL
UNSW 5V
From/To 20 DECK TERMINAL CN1
Q205 2SD1406Y
Q204 2SD637R,S
R270 0
C218 0.001
C213 1/50
R230 10K
D219 RD15EB1
D216
D218
D217
D215
D213
D214
R232 12K
C219 0.022
R234 15K
R236 5.6K
R237 18K
R235 1.2K
R238 15K
R233 10K
R239 6.8K
R231 3.3K
D212 RD8.2EB2
IC203 BA6238AU3
MOTOR
MODE
INPUT
OUTPUT
MODE CTL FWD H L H L H O
MODE CTL REV H L L H L O
CASSETTE FWD L H H L O H
CASSETTE REV L H L H O L
BRAKE MODE L L L L L L
O: OPEN
Vcc1
Vcc2
RA202 4.7K x 3
C212 10/16
RA203 10K x 4
R274 10K
C215 2.2/50
C220 4.7/25
R275 12K
Q215
Q214
Q215 DTC144EF
Q214 DTC144EF
C210 0.022
C211 0.022
R245 4.7K
R246 4.7K
R247 4.7K
R248 10K
R249 10K
R251 10K
R252 10K
R253 10K
R254 10K
R255 10K
R256 4.7K
R257 10K
R258 10K
DATA 0
DATA 1
DATA 2
DATA 3
STROBE
MODE SENS-1
MODE SENS-2
TU FG CNT PLS
DEW SENS
CAP FWD(+) CAP REV(-)
CAP DRIVE
CAP DRIVE-1
CAP DRIVE-2,-4
CAP DRIVE-3
CAP DRIVE-5
FRAME ADVANCE
OPEN EX, LOAD/UL
MODE MOTOR
CASS MOTOR
MOTOR DRIVE
COUNTER
FM ENVELOPE
STAND BY LED
D OFF COMP
CASS LOAD END
CASS DET
REC SAFETY
END SENS
START SENS
POWER
TIMER
EJECT END
VDD
REC MUT (MODE 2)
REC (MODE 1)
PB
VIDEO/TV
SPECIAL PB
VPCON
FMA MUT
AUDIO MUT
AUDIO REC MUT
AUDIO PB
AUDIO BIAS
AUDIO DUB
DATA 0
DATA 1
SEARCH
MODE 3
DRUM FF
S REW
REV
POWER ON
TNR SW
CAP FG
REMOTE PAUSE
COUNT UP /DOWN
REMOTE
GND
RESET
X IN
X OUT
NC
GND
R213 10K
C206 2.2/50
CF201
R267 2.2K
R268 10K
Q213 2SD638R,S
CN205
MODE CTL REV(-)
MODE CTL FWD(+)
GND
CASS MOTOR(+)
CASS MOTOR(-)
EJECT END
CASS LOAD END
CASS DET
REC SAFETY
END SENS
START SENS
To 30 MODE MOTOR CN1
From/To 18 CASSETTE HOUSING CN1
R229 120K
R228 120K


03 T/S/M(MECHACON)
CN207
UNSW 12V
-30V
SWD 12V
POWER ON
UNREG 17V
DRUM 12V
SWD 5V
GND(MOTOR)
GND
From/To 01 REGULATOR CN1
From/To 03 TIMER
COUNT PULSE
DATA 0
DATA 1
DATA 2
DATA 3
STROBE
CN206
From/To 20 DECK TERMINAL CN1
MODE SENS-1
MODE SENS-2
TU SENS
CAP FWD/REV
VOLTAGE CTL
UNSW 5V
CN205
To 30 MODE MOTOR CN1
From/To 18 CASSETTE HOUSING CN1
MODE CTL REV(-)
MODE CTL FWD(+)
CASS MOTOR(+)
CASS MOTOR(-)
EJECT END
CASS LOAD END
CASS DET
REC SAFETY
END SENS
START SENS
IC202 M50742-614SP
IC203 BA6238AU3
Q201 2SC3243D,E
Q203 DTC144WF
Q204 2SD637R,S
Q205 2SD1406Y
Q206 DTC144EF
Q208 DTA124EF
Q213 2SD638R,S
Q214 DTC144EF
Q215 DTC144EF
CF201
EK model only
CN201
To 02 VIDEO CN3
To 02 VIDEO CN8
REC MUT CTL
REC CTL
PB CTL
SPECIAL PB
FMA MUT
AUDIO MUT
BIAS CTL
A DUB CTL
To 03 TIMER
To 03 SERVO
MODE 2
MODE 1
UNREG 17V
DRUM 12V
From/To 03 SERVO
V PULSE CTL
VP CON
SEARCH
MODE 3
DRUM FF
REVERSE
CAP FG
CAP DRIVE
From/To 03 TIMER
COUNT UP/DOWN
CN203
From 06 TERMINAL CN5
TV REMOTE
NC
REMOTE PAUSE
CN204
From 07 SWITCH CN5
TIMER SW
COUNTER SW
AUX
CN202
From/To 07 SWITCH CN7
SWD 5V
UNSW 12V
POWER ON
REMOTE
OPE
STAND BY LED
CN1
START SENSOR
END SENSOR
REC SAFETY
CASS DET
CASS LOAD END
EJECT END
CASS MOTOR(REV)
CASS MOTOR(FWD)
From/To 03 MECHACON,CN204
MODE SENSOR-1
MODE SENSOR-2
TAKE-UP SENS
CAP FG(H)
CAP FG(L)
CAP FWD/CAP REV
VOLTAGE CTL
REG 5V
From/To 03 MECHACON,CN207
To 03 SERVO,CN402
From 03 MECHACON,CN206
MODE CTL FWD(+)
MODE CTL REV(-)

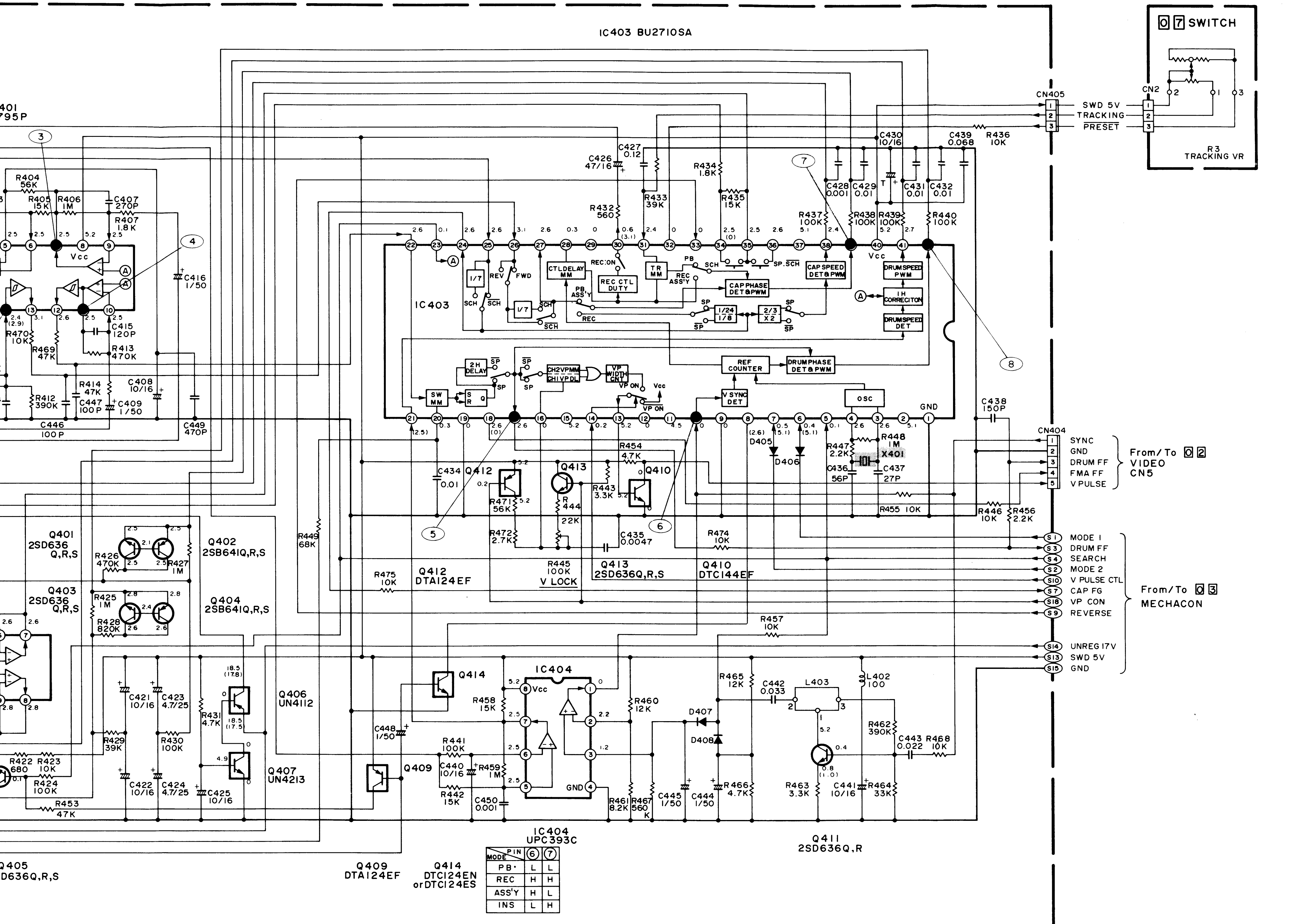
NOTES:

1. Shaded (▨) parts are critical for safety. Replace only with specified part numbers.
2. Voltages are DC-measured with a digital voltmeter during stop mode.

3.19 SERVO SCHEMATIC DIAGRAM

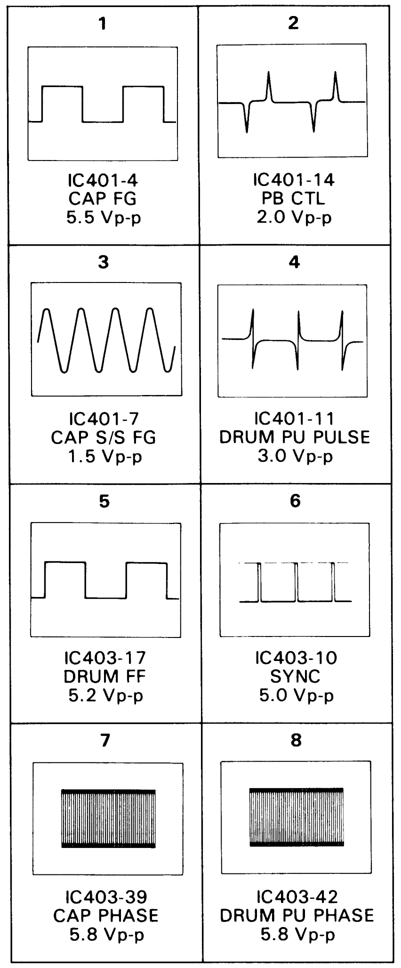

03 T/S/M (SERVO)
12 A/CTL HEAD
CTL
CN2
CTL HEAD
GND
CN401
CN403
From/To 08 PRE/MDA CN2
DRUM PU PULSE
DRUM FG
GND
DRUM START
GND(MOTOR)
DRUM 12V
DRUM DRIVE
NC
R473 10 (PTH)
From 20 DECK TERMINAL CN1
CAP FG
GND
CN402
From/To 02 VIDEO CN7
SW POINT
CTL PULSE
CN406
From/To 03 MECHACON
DRUM 12V
GND(MOTOR)
MODE 3
CAP DRIVE
S17
S16
S5
S6
IC401 M51795P
IC401
IC402
IC402 UPC324C or IR3702
IC403 BU2710SA
IC403
IC404
IC404 UPC393C
Q401 2SD636 Q,R,S
Q402 2SB641Q,R,S
Q403 2SD636 Q,R,S
Q404 2SB641Q,R,S
Q405 2SD636Q,R,S
Q406 UN4112
Q407 UN4213
Q409 DTA124EF
Q410 DTC144EF
Q411 2SD636Q,R
Q412 DTA124EF
Q413 2SD636Q,R,S
Q414 DTC124EN or DTC124ES
D401
D402
D403 RD5.1 EB3
D405
D406
D407
D408
X401
L402 100
L403
R445 100K V LOCK
CTL DELAY MM
REC CTL DUTY
TR MM
CAP PHASE DET&PWM
CAP SPEED DET&PWM
DRUM SPEED PWM
1H CORRECITON
DRUM SPEED DET
REF COUNTER
DRUM PHASE DET&PWM
2H DELAY
SW MM
CH2 VP MM
CH1 VP DL
VP WIDTH CNT
V SYNC DET
OSC
1/7
1/24
1/8
2/3
X2
REV
FWD
SCH
REC
PB
ASS'Y
SP
REC:ON
VP ON
Vcc
GND
1
2
3
4
5
A
B
C
D
E
F
G
H

MODE \ PIN	⑥	⑦
PB·	L	L
REC	H	H
ASS'Y	H	L
INS	L	H


IC403 BU2710SA
IC403
Q401 2SD636 Q,R,S
Q402 2SB641Q,R,S
Q403 2SD636 Q,R,S
Q404 2SB641Q,R,S
Q405 2SD636Q,R,S
Q406 UN4112
Q407 UN4213
Q409 DTA124EF
Q410 DTC144EF
Q411 2SD636Q,R
Q412 DTA124EF
Q413 2SD636Q,R,S
Q414 DTC124EN or DTC124ES
IC404 UPC393C
R445 100K V LOCK
X401
07 SWITCH
CN2
R3 TRACKING VR
CN405
SWD 5V
TRACKING
PRESET
CN404
SYNC
GND
DRUM FF
FMA FF
V PULSE
From/To 02 VIDEO CN5
MODE 1
DRUM FF
SEARCH
MODE 2
V PULSE CTL
CAP FG
VP CON
REVERSE
UNREG 17V
SWD 5V
GND
From/To 03 MECHACON
REF COUNTER
DRUMPHASE DET & PWM
CAP PHASE DET & PWM
CAP SPEED DET & PWM
DRUMSPEED PWM
DRUMSPEED DET
1H CORRECITON
V SYNC DET
OSC
CTL DELAY MM
REC CTL DUTY
TR MM
2H DELAY
SW MM
CH2VPMM
CH1VPDL
VP WIDTH CNT
1/24 1/78
2/3 X2

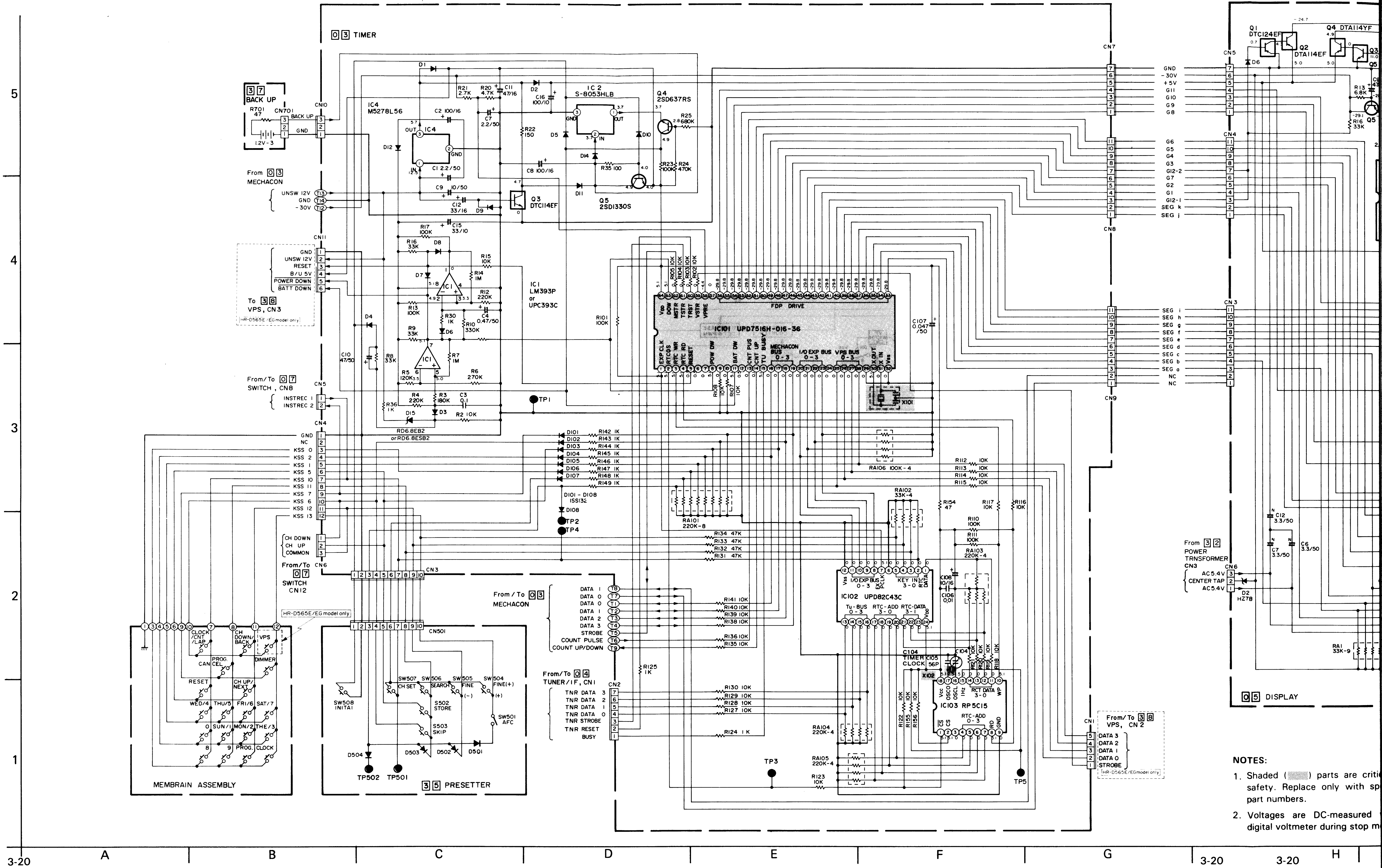
MODE \ PIN	⑥	⑦
PB·	L	L
REC	H	H
ASS'Y	H	L
INS	L	H

—Waveforms of SERVO circuit—



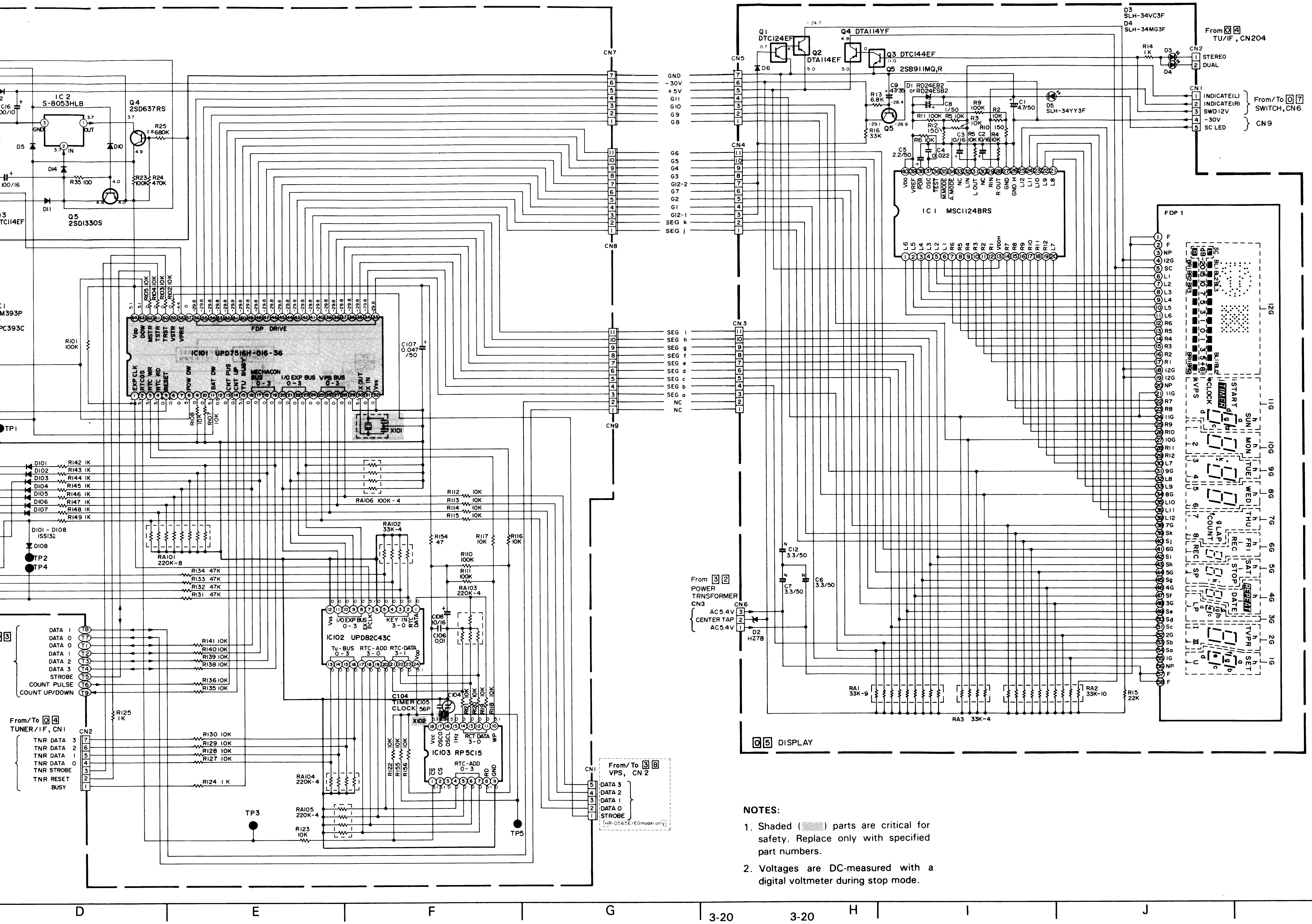
NOTE: Shaded ( ) parts are critical for safety. Replace only with specified part numbers.

3.20 TIMER AND DISPLAY SCHEMATIC DIAGRAM


03 TIMER
37 BACK UP
R701 47
CN701
BACK UP
GND
1.2V-3
CN10
IC4 M5278L56
IC2 S-8053HLB
Q4 2SD637RS
Q3 DTC114EF
Q5 2SD1330S
From 03 MECHACON
UNSW 12V
GND
-30V
CN11
UNSW 12V
RESET
B/U 5V
POWER DOWN
BATT DOWN
To 38 VPS, CN3
HR-D565E/EG model only
IC1 LM393P or UPC393C
From/To 07 SWITCH, CN8
CN5
INSTREC 1
INSTREC 2
CN4
NC
KSS 0
KSS 2
KSS 1
KSS 5
KSS 10
KSS 11
KSS 7
KSS 6
KSS 12
KSS 13
CH DOWN
CH UP
COMMON
From/To 07 SWITCH CN12
CN6
RD6.8EB2 or RD6.8ESB2
TP1
D101 - D108 1SS132
TP2
TP4
IC101 UPD7516H-016-36
FDP DRIVE
EXP CLK
RTC CS
RTC WR
RTC RD
RESET
POW DW
BAT DW
CNT PUS
CNT UP
TU BUSY
MECHACON BUS 0-3
I/O EXP BUS
VPS BUS 0-3
X OUT
X IN
X101
RA106 100K-4
RA101 220K-8
RA102 33K-4
RA103 220K-4
IC102 UPD82C43C
I/O EXP BUS 0-3
KEY IN 3-0
Tu-BUS 0-3
RTC-ADD 3-0
RTC-DATA 3-1
C104 TIMER CLOCK
X102
IC103 RP5C15
RCT DATA 3-0
RTC-ADD 0-3
CN3
CN501
From/To 03 MECHACON
DATA 1
DATA 0
DATA 0
DATA 1
DATA 2
DATA 3
STROBE
COUNT PULSE
COUNT UP/DOWN
From/To 04 TUNER/IF, CN1
CN2
TNR DATA 3
TNR DATA 2
TNR DATA 1
TNR DATA 0
TNR STROBE
TNR RESET
BUSY
TP3
TP5
RA104 220K-4
RA105 220K-4
CN1
From/To 38 VPS, CN 2
DATA 3
DATA 2
DATA 1
DATA 0
STROBE
HR-D565E/EG model only
CN7
GND
-30V
+5V
G11
G10
G9
G8
G6
G5
G4
G3
G12-2
G7
G2
G1
G12-1
SEG k
SEG j
CN8
SEG i
SEG h
SEG g
SEG f
SEG e
SEG d
SEG c
SEG b
SEG a
NC
NC
CN9
Q1 DTC124EF
Q2 DTA114EF
Q4 DTA114YF
Q3
Q5
CN5
CN4
CN3
From 32 POWER TRNSFORMER CN3
CN6
AC5.4V
CENTER TAP
AC5.4V
D2 HZ7B
RA1 33K-9
05 DISPLAY
CLOCK /CNT /LAP
CH DOWN/BACK
VPS
PROG. CANCEL
DIMMER
RESET
CH UP/NEXT
WED/4
THU/5
FRI/6
SAT/7
0
SUN/1
MON/2
THE/3
8
9
PROG.
CLOCK
MEMBRAIN ASSEMBLY
SW508 INITAI
SW507 CH SET
SW506 SEARCH
SW505 FINE (-)
SW504 FINE(+)
S502 STORE
S503 SKIP
SW501 AFC
D504
D503
D502
D501
TP502
TP501
35 PRESETTER
A
B
C
D
E
F
G
H
1
2
3
4
5

NOTES:

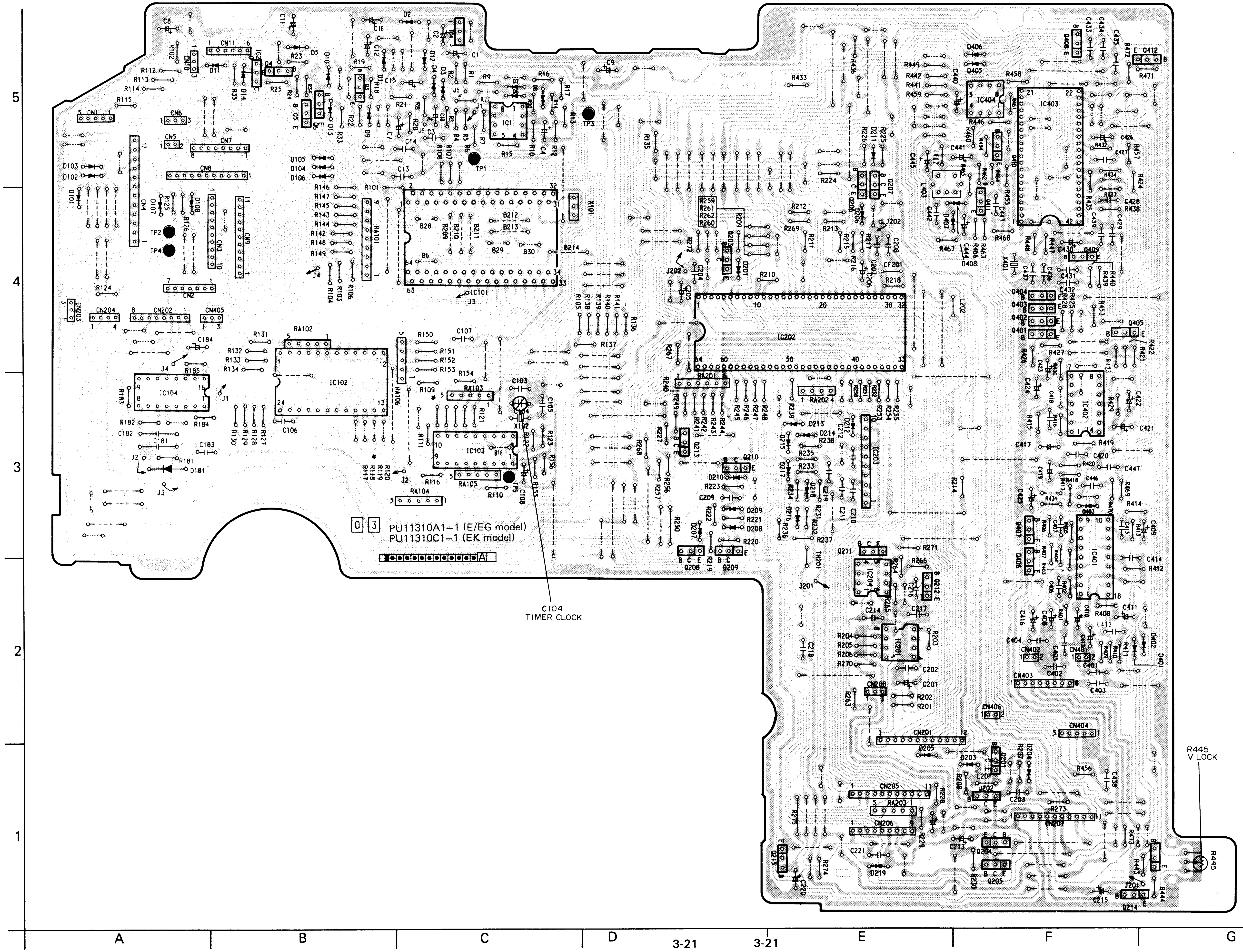
1. Shaded ( ) parts are criti
safety. Replace only with sp
part numbers.
2. Voltages are DC-measured
digital voltmeter during stop m


IC 2
S-8053HLB
Q4
2SD637RS
R25
680K
D5
D10
D14
R35 100
R23 100K
R24 470K
D11
Q5
2SD1330S
TC114EF
CN7
GND
-30V
+5V
G11
G10
G9
G8
G6
G5
G4
G3
G12-2
G7
G2
G1
G12-1
SEG k
SEG j
CN8
SEG i
SEG h
SEG g
SEG f
SEG e
SEG d
SEG c
SEG b
SEG a
NC
NC
CN9
M393P
PC393C
R101
100K
IC101 UPD7516H-016-36
FDP DRIVE
C107
0.047
/50
X101
TP1
D101
D102
D103
D104
D105
D106
D107
R142 1K
R143 1K
R144 1K
R145 1K
R146 1K
R147 1K
R148 1K
R149 1K
D101 - D108
1SS132
D108
TP2
TP4
RA101
220K-8
RA106 100K-4
R112 10K
R113 10K
R114 10K
R115 10K
R134 47K
R133 47K
R132 47K
R131 47K
RA102
33K-4
R154
47
R117
10K
R116
10K
R110
100K
R111
100K
RA103
220K-4
IC102 UPD82C43C
I/O EXP BUS 0-3
KEY IN 3-0
RTC DATA
Tu-BUS 0-3
RTC-ADD 3-0
RTC-DATA 3-1
C108
10/16
C106
0.01
DATA 1
DATA 0
DATA 0
DATA 1
DATA 2
DATA 3
STROBE
COUNT PULSE
COUNT UP/DOWN
R141 10K
R140 10K
R139 10K
R138 10K
R136 10K
R135 10K
R125
1K
From/To 0 4
TUNER/IF, CN1
CN2
TNR DATA 3
TNR DATA 2
TNR DATA 1
TNR DATA 0
TNR STROBE
TNR RESET
BUSY
R130 10K
R129 10K
R128 10K
R127 10K
R124 1K
C104
TIMER
CLOCK
C105
56P
X102
R118
IC103 RP5C15
RCT DATA 3-0
RTC-ADD 0-3
R122
R155
R156
RA104
220K-4
RA105
220K-4
R123
10K
TP3
TP5
CN1
From/To 3 8
VPS, CN 2
DATA 3
DATA 2
DATA 1
DATA 0
STROBE
HR-D565E/EG model only
Q1
DTC124EF
Q2
DTA114EF
Q4 DTA114YF
Q3 DTC144EF
Q5 2SB911MQ,R
D6
CN5
CN4
CN3
CN6
D3
SLH-34VC3F
D4
SLH-34MG3F
R14
1K
From 0 4
TU/IF, CN204
STEREO
DUAL
INDICATE(L)
INDICATE(R)
SWD12V
-30V
SC LED
From/To 0 7
SWITCH, CN6
CN9
R13
6.8K
C9
47/35
D1 RD24EB2
or RD24ESB2
C8
1/50
R11 100K
R5 10K
R9
100K
R2
10K
R3
10K
R10
150
R12
150
C1
47/50
D5
SLH-34YY3F
R16
33K
C5
2.2/50
R6 10K
C4
0.022
C3
10/16
R5
10K
C2
10/16
R4
10K
IC1 MSC1124BRS
FDP 1
From 3 2
POWER
TRNSFORMER
CN3
AC5.4V
CENTER TAP
AC5.4V
D2
HZ7B
C12
3.3/50
C7
3.3/50
C6
3.3/50
RA1
33K-9
RA3 33K-4
RA2
33K-10
R15
22K
0 5 DISPLAY
D
E
F
G
H
I
J
K

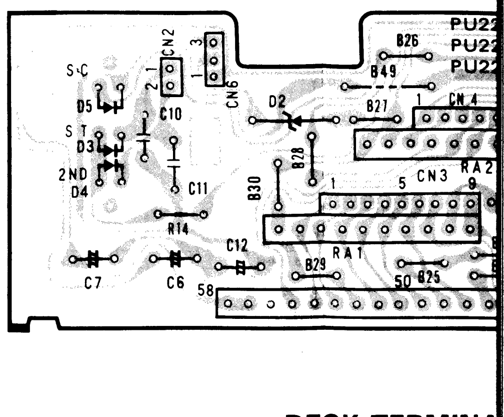
NOTES:

1. Shaded (▨) parts are critical for safety. Replace only with specified part numbers.
2. Voltages are DC-measured with a digital voltmeter during stop mode.

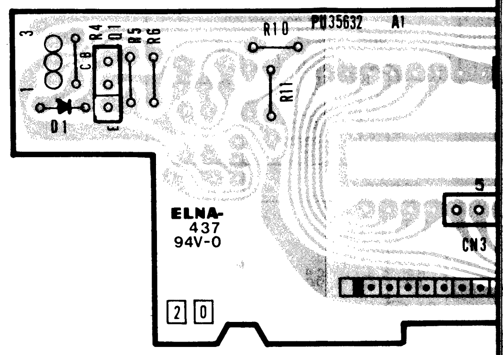
3.21 TIMER/SERVO/MECHACON CIRCUIT BOARD


PU11310A1-1 (E/EG model)
PU11310C1-1 (EK model)
C104
TIMER CLOCK
R445
V LOCK
IC101
IC102
IC103
IC104
IC202
IC203
IC204
IC201
IC401
IC402
IC403
IC404
TP1
TP2
TP3
TP4
TP5
X101
X102
CN201
CN202
CN203
CN204
CN205
CN206
CN207
CN208
CN401
CN402
CN403
CN404
CN405
CN406
A
B
C
D
E
F
G
H
1
2
3
4
5

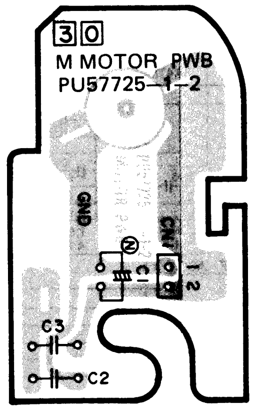
3.22 DISPLAY AN



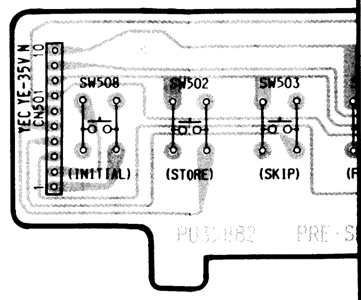
– DECK TERMINA

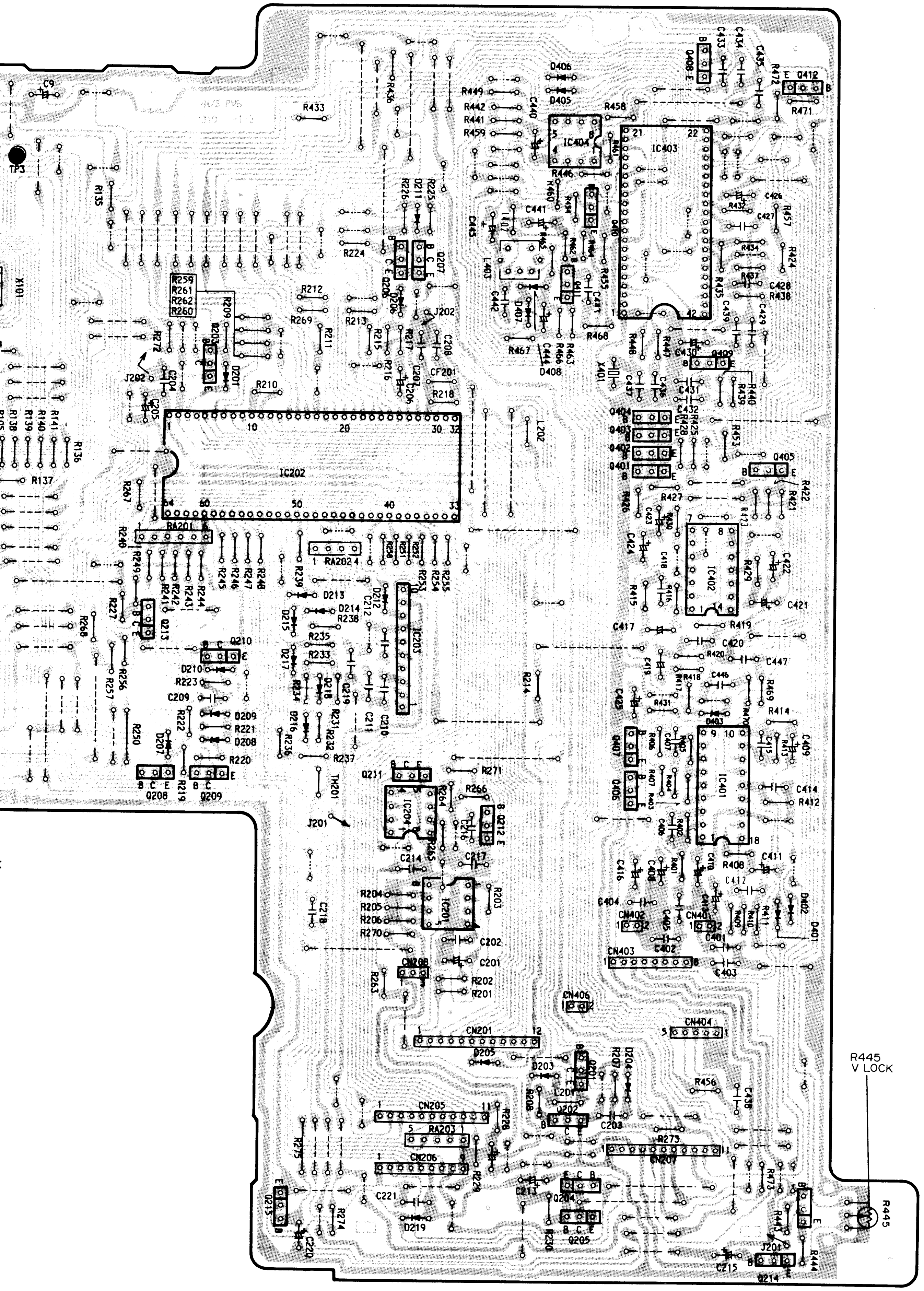

ELNA
437
94V-0
PU35632 A1

– MODE CTL MOTOR –


M MOTOR PWB
PU57725-1-2
GND
C3
C2

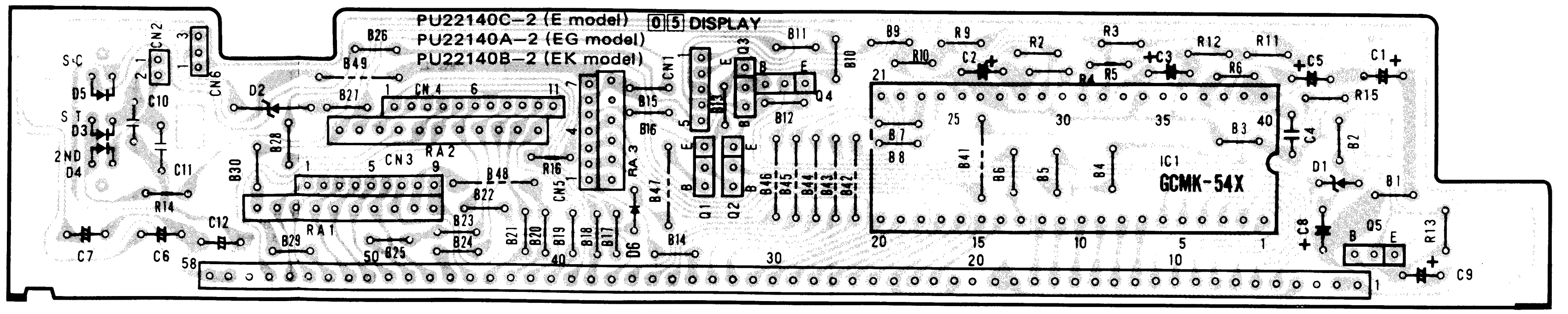
– PR


SW508
SW502
SW503
(INITIAL)
(STORE)
(SKIP)

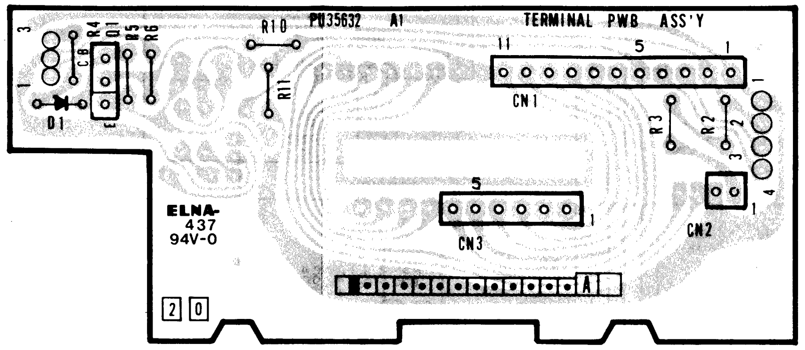

TP3
X101
IC202
IC203
IC204
IC201
IC401
IC402
IC403
IC404
CN201
CN205
CN206
CN207
CN208
CN401
CN402
CN403
CN404
CN406
RA201
RA202
RA203
R445
V LOCK

3.22 DISPLAY AND DECK TERMINAL etc. CIRCUIT BOARDS

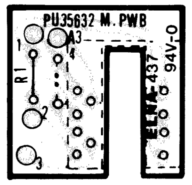
– DISPLAY –


PU22140C-2 (E model)
PU22140A-2 (EG model)
PU22140B-2 (EK model)
05 DISPLAY
IC1
GCMK-54X
CN2
CN3
CN4
CN5
CN6
RA1
RA2
RA3
S-C
ST
2ND
D1
D2
D3
D4
D5
Q1
Q2
Q3
Q4
Q5

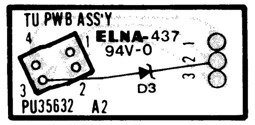
– DECK TERMINAL –


PU35632 A1
TERMINAL PWB ASS'Y
CN1
CN2
CN3
ELNA
437
94V-0
20
D1
Q1

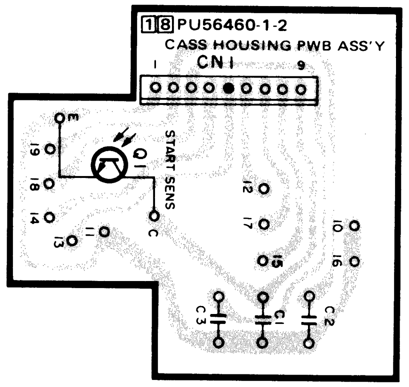
–MODE SENSOR–


PU35632 M.PWB
ELNA 437
94V-0
R1

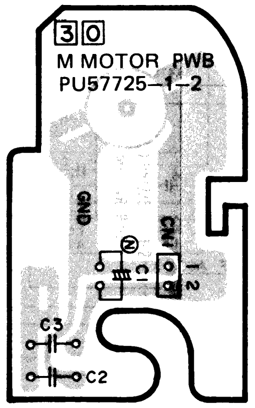
–TAKE UP SENSOR–


TU PWB ASS'Y
ELNA 437
94V-0
PU35632 A2
D3

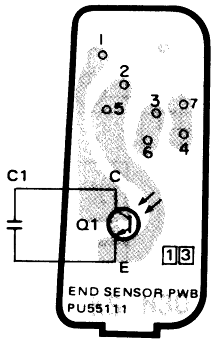
– CASSETTE HOUSING –


18 PU56460-1-2
CASS HOUSING PWB ASS'Y
CN1
Q1
START SENS
C1
C2
C3

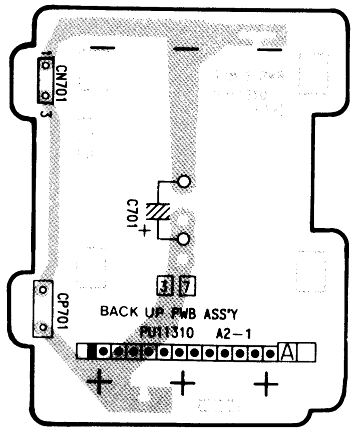
– MODE CTL MOTOR –


30
M MOTOR PWB
PU57725-1-2
GND
CN1
C1
C2
C3

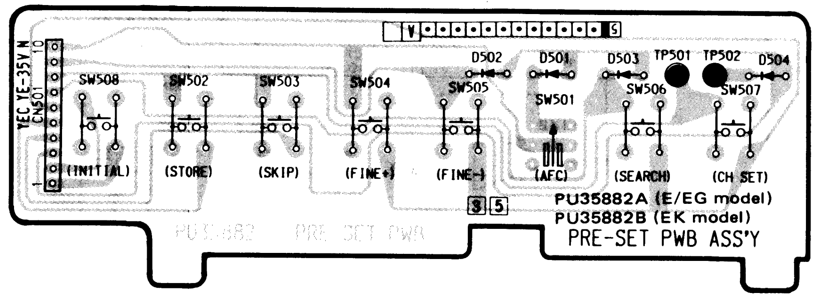
– END SENSOR –


C1
Q1
C
E
13
END SENSOR PWB
PU55111

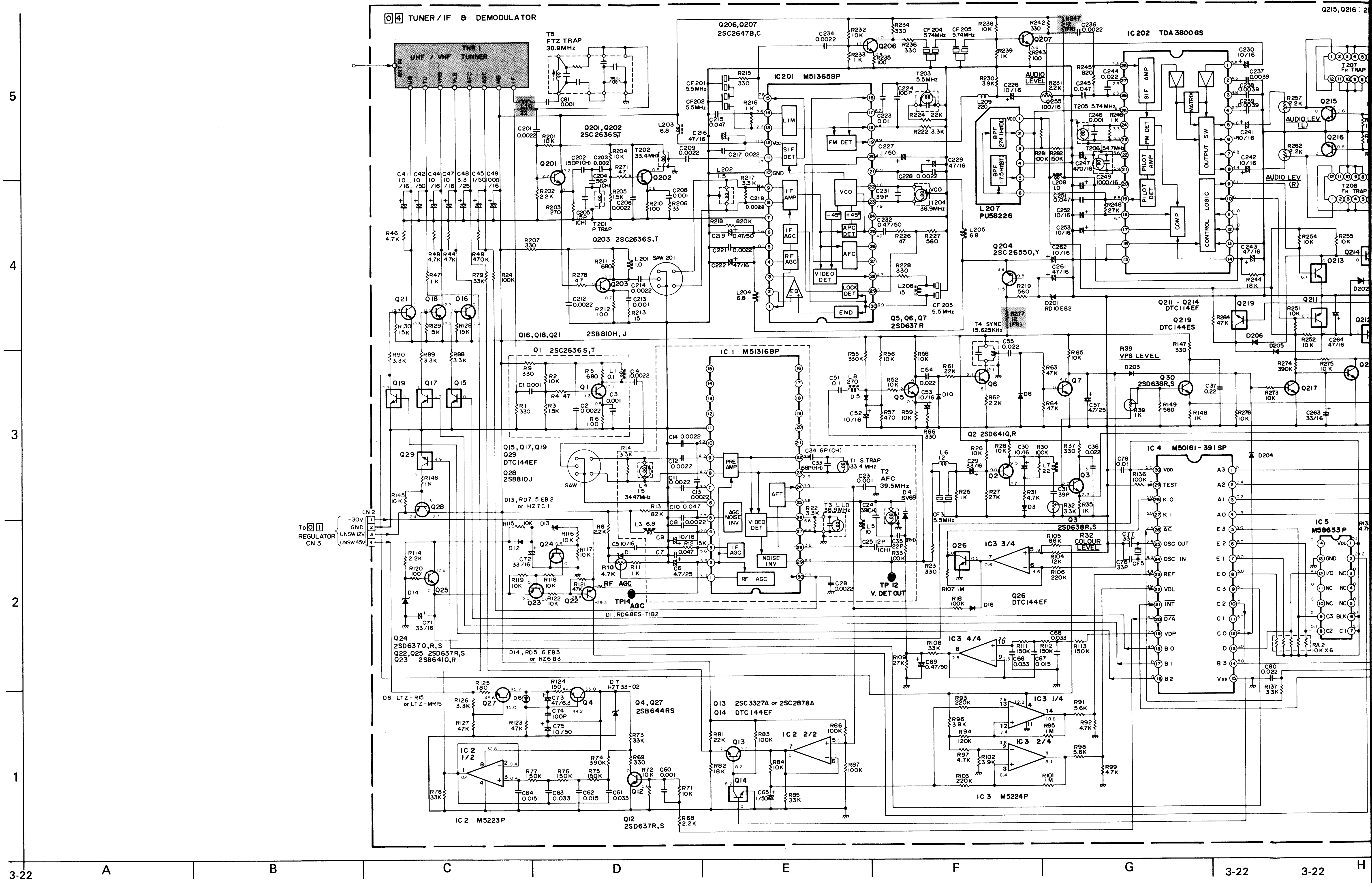
– BACK UP –


CN701
C701
CP701
37
BACK UP PWB ASS'Y
PU11310 A2-1

– PRESETTER –

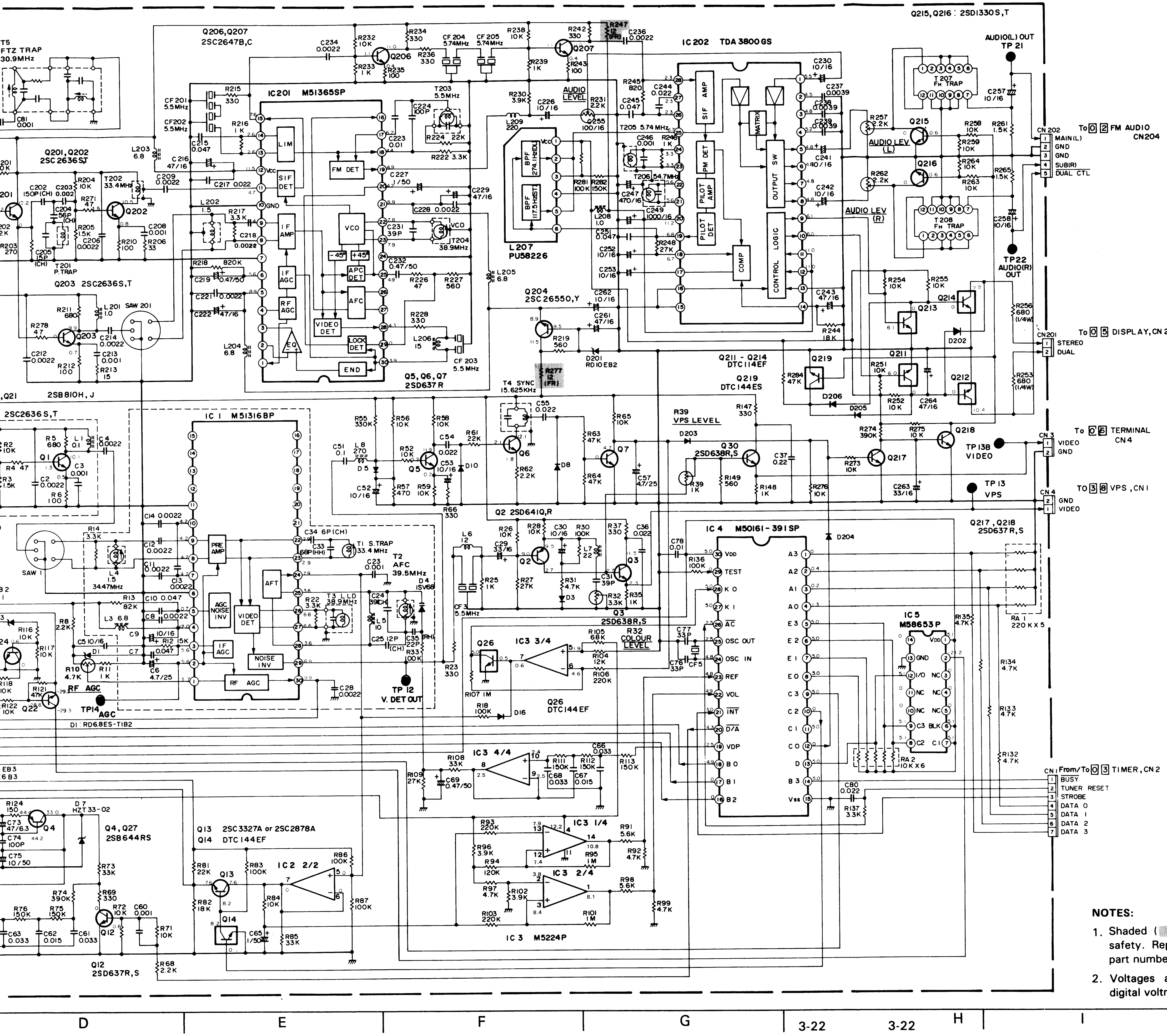

CN501
SW508
SW502
SW503
SW504
SW505
SW501
SW506
SW507
D501
D502
D503
D504
TP501
TP502
(INITIAL)
(STORE)
(SKIP)
(FINE+)
(FINE-)
(AFC)
(SEARCH)
(CH SET)
35
PU35882A (E/EG model)
PU35882B (EK model)
PRE-SET PWB ASS'Y

3.23 TUNER/IF AND DEMODULATOR SCHEMATIC DIAGRAM (HR-D565E/EG)



04 TUNER/IF & DEMODULATOR
TNR 1
UHF / VHF TUNNER
ANT IN
UB
TU
VHB
VLB
AFC
AGC
MB
IF
T5
FTZ TRAP
30.9MHz
Q201, Q202
2SC2636S,T
Q201
Q202
T202
33.4MHz
T201
P.TRAP
Q203 2SC2636S,T
Q203
L201
SAW 201
Q206, Q207
2SC2647B,C
Q206
Q207
IC201 M51365SP
LIM
SIF DET
IF AMP
IF AGC
RF AGC
EQ
FM DET
VCO
-45°
+45°
APC DET
AFC
VIDEO DET
LOCK DET
END
Vcc
GND
T203
5.5MHz
T204
38.9MHz
CF201
5.5MHz
CF202
5.5MHz
CF203
5.5MHz
CF204
5.74MHz
CF205
5.74MHz
Q5, Q6, Q7
2SD637R
Q204
2SC2655O,Y
Q204
D201
RD10EB2
L207
PU58226
BPF
274.1kHz(DL)
BPF
117.5kHz(ST)
AUDIO LEVEL
T205 5.74MHz
T206 54.7MHz
IC202 TDA3800GS
SIF AMP
FM DET
PILOT AMP
PILOT DET
MATRIX
OUTPUT SW
CONTROL LOGIC
COMP
T207
FM TRAP
T208
FM TRAP
Q215, Q216
Q215
Q216
AUDIO LEV (L)
AUDIO LEV (R)
Q211 - Q214
DTC114EF
Q219
DTC144ES
Q211
Q213
Q214
Q217
Q219
D202
D205
D206
Q16, Q18, Q21
2SB810H, J
Q21
Q18
Q16
Q1 2SC2636S,T
Q1
IC1 M51316BP
PRE AMP
AGC NOISE INV
VIDEO DET
AFT
IF AGC
NOISE INV
RF AGC
T1 S.TRAP
33.4MHz
T2
AFC
39.5MHz
T3 L.L.D
38.9MHz
D4
15V6B
SAW 1
L4
34.47MHz
TP12
V. DET OUT
TP14
AGC
RF AGC
D1 RD6.8ES-T1B2
Q15, Q17, Q19
Q29
DTC144EF
Q28
2SB810J
Q19
Q17
Q15
Q29
Q28
D13, RD7.5EB2
or HZ7C1
D13
D12
Q24
Q23
Q22
Q25
D14
To 01
REGULATOR
CN 3
CN 2
-30V
GND
UNSW12V
UNSW45V
Q24
2SD637Q,R,S
Q22, Q25 2SD637R,S
Q23 2SB641Q,R
D14, RD5.6EB3
or HZ6B3
D6 LTZ-R15
or LTZ-MR15
Q27
D6
Q4
D7
HZT33-02
Q4, Q27
2SB644RS
IC2 1/2
IC2 M5223P
Q12
Q12
2SD637R,S
Q13 2SC3327A or 2SC2878A
Q14 DTC144EF
Q13
Q14
IC2 2/2
T4 SYNC
15.625KHz
Q6
Q5
Q7
D5
D8
D10
Q2 2SD641Q,R
Q2
Q3
D3
Q3
2SD638R,S
CF3
5.5MHz
Q26
IC3 3/4
Q26
DTC144EF
D16
R32
COLOUR
LEVEL
R39
VPS LEVEL
D203
Q30
2SD638R,S
IC3 4/4
IC3 1/4
IC3 2/4
IC3 M5224P
IC4 M50161-391SP
VDD
TEST
K0
K1
AC
OSC OUT
OSC IN
REF
VOL
INT
D/A
VDP
B0
B1
B2
A3
A2
A1
A0
E3
E2
E1
E0
C3
C2
C1
C0
D
B3
Vss
CF5
D204
IC5
M58653P
VDD
GND
I/O
NC
C3
C2
BLK
C1
RA2
10K×6
A
B
C
D
E
F
G
H
1
2
3
4
5

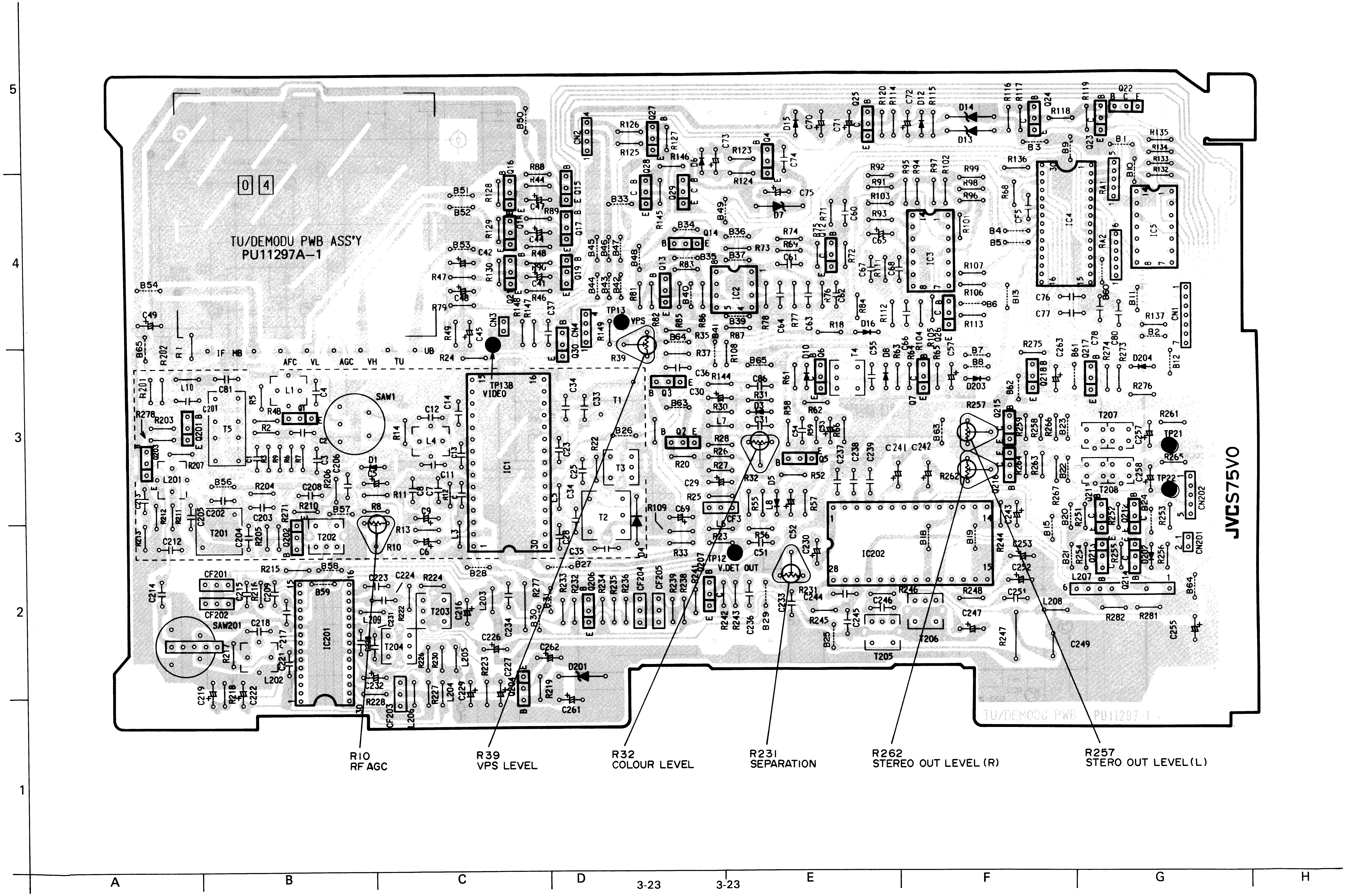
TUNER/IF DEMODULATOR


Q215,Q216 : 2SD1330S,T
T5
FTZ TRAP
30.9MHz
Q206,Q207
2SC2647B,C
IC201 M51365SP
IC202 TDA3800GS
FM DET
SIF DET
LIM
IF AMP
IF AGC
RF AGC
VCO
APC DET
AFC
VIDEO DET
LOCK DET
END
EQ
SIF AMP
PM DET
PILOT AMP
PILOT DET
MATRIX
OUTPUT SW
COMP
CONTROL LOGIC
L207
PU58226
BPF 274.1kHz(L)
BPF 117.5kHz(ST)
AUDIO LEVEL
AUDIO LEV (L)
AUDIO LEV (R)
T207 FH TRAP
T208 FH TRAP
AUDIO(L) OUT TP 21
TP22 AUDIO(R) OUT
CN202
To 0 2 FM AUDIO CN204
MAIN(L)
GND
GND
SUB(R)
DUAL CTL
Q201,Q202 2SC2636S,T
Q203 2SC2636S,T
T201 P.TRAP
SAW 201
Q204 2SC2655O,Y
Q5,Q6,Q7 2SD637R
2SB810H,J
T4 SYNC 15.625KHz
Q211 - Q214 DTC114EF
Q219 DTC144ES
CN201
To 0 5 DISPLAY, CN2
STEREO
DUAL
R39 VPS LEVEL
Q30 2SD638R,S
Q217
Q218
TP13B VIDEO
TP 13 VPS
CN 3
To 0 6 TERMINAL CN4
VIDEO
GND
CN 4
To 3 8 VPS, CN1
GND
VIDEO
Q217, Q218 2SD637R,S
IC 1 M51316BP
PRE AMP
AGC NOISE INV
VIDEO DET
AFT
IF AGC
NOISE INV
RF AGC
T1 S.TRAP 33.4 MHz
T2 AFC 39.5MHz
T3 LLD 38.9MHz
SAW 1
L4 34.47MHz
Q2 2SD641Q,R
Q3 2SD638R,S
R32 COLOUR LEVEL
IC 4 M50161-391SP
IC5 M58653P
RA 1 220KX5
RA 2 10KX6
IC3 3/4
IC3 4/4
IC3 1/4
IC3 2/4
IC 3 M5224P
Q26 DTC144EF
TP 12 V. DET OUT
TP14 AGC
RF AGC
D1 : RD6.8ES-T1B2
D7 HZT33-02
Q4, Q27 2SB644RS
Q13 2SC3327A or 2SC2878A
Q14 DTC144EF
IC2 2/2
Q12 2SD637R,S
CN1 From/To 0 3 TIMER, CN2
BUSY
TUNER RESET
STROBE
DATA 0
DATA 1
DATA 2
DATA 3
D
E
F
G
H
I
J
K

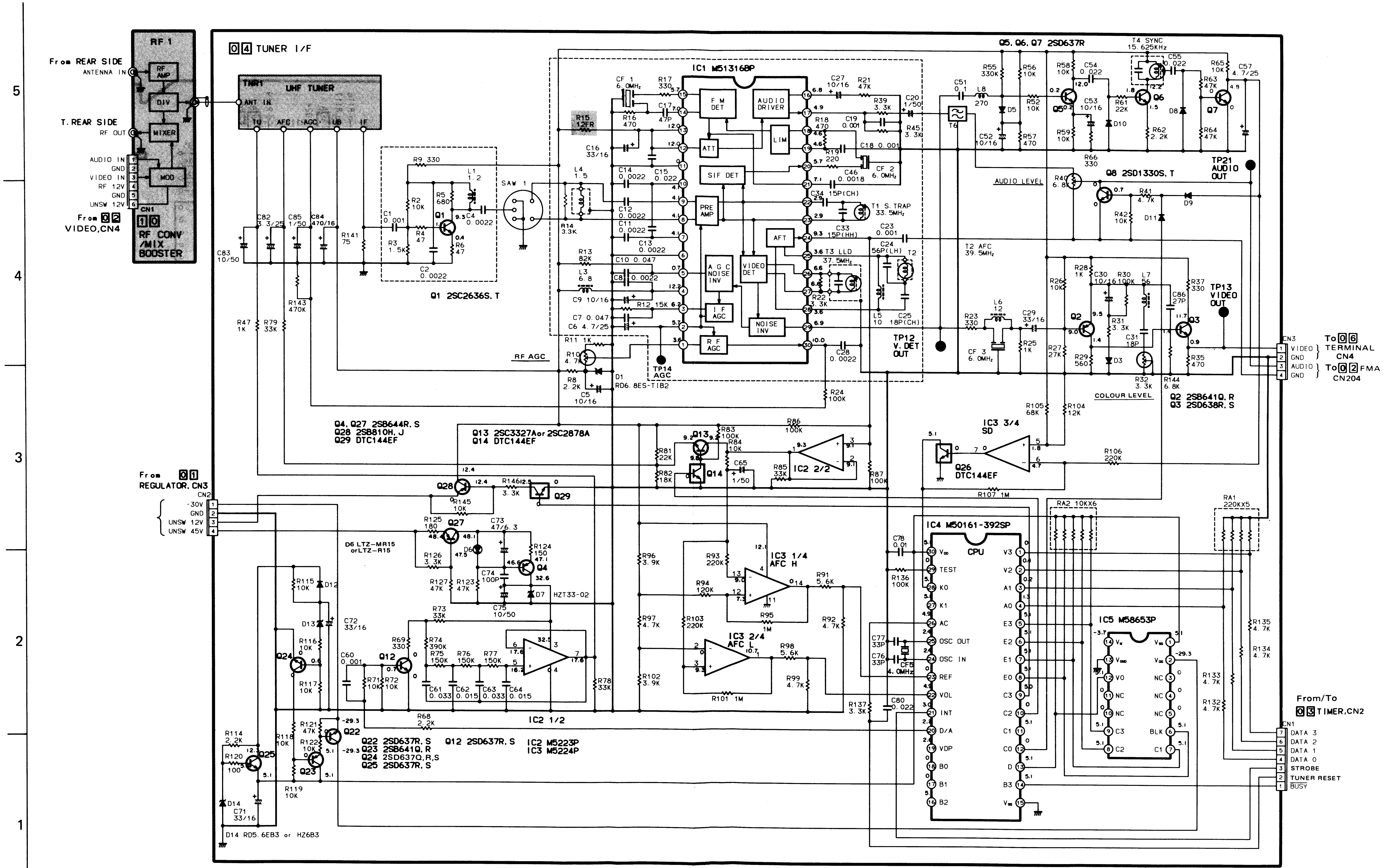
NOTES:

1. Shaded (▨) parts are critical for safety. Replace only with specified part numbers.
2. Voltages are DC-measured with a digital voltmeter during stop mode.

3.24 TUNER/IF AND DEMODULATOR CIRCUIT BOARD (HR-D565E/EG)


TU/DEMODU PWB ASS'Y
PU11297A-1
JVC S75V0
TP13 VPS
TP13B VIDEO
TP12 V.DET OUT
TP21
TP22
IC1
IC2
IC3
IC4
IC5
IC201
IC202
SAW1
SAW201
R10
RF AGC
R39
VPS LEVEL
R32
COLOUR LEVEL
R231
SEPARATION
R262
STEREO OUT LEVEL (R)
R257
STERO OUT LEVEL (L)
5
4
3
2
1
A
B
C
D
E
F
G
H

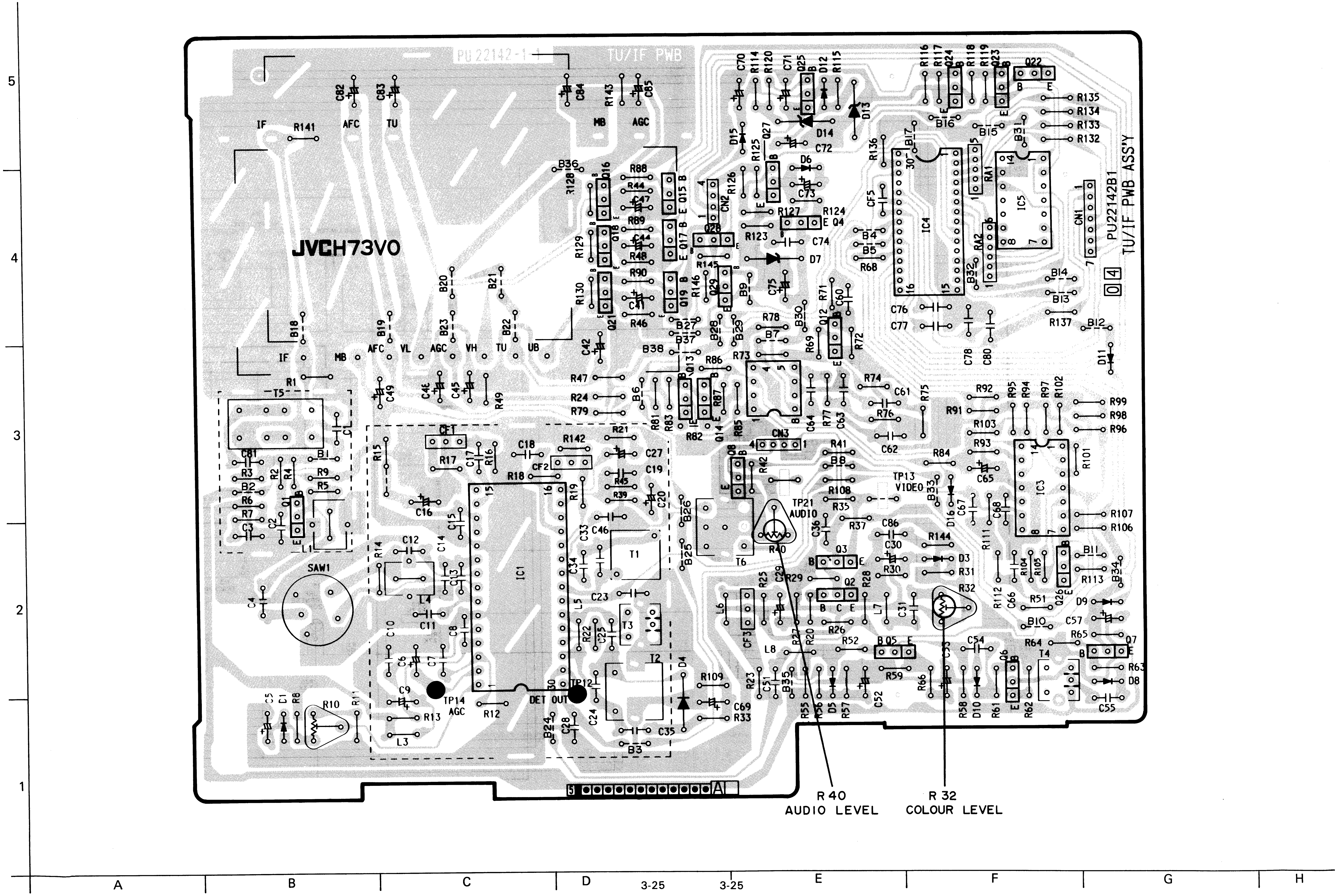
3.25 TUNER/IF SCHEMATIC DIAGTRAM (HR-D565EK)


04 TUNER I/F
RF 1
RF AMP
DIV
MIXER
MOD
From REAR SIDE ANTENNA IN
T. REAR SIDE RF OUT
AUDIO IN
GND
VIDEO IN
RF 12V
GND
UNSW 12V
CN1
From 02 VIDEO,CN4
10 RF CONV /MIX BOOSTER
TNR1 UHF TUNER
ANT IN
TU
AFC
AGC
UB
IF
SAW 1
Q1 2SC2636S, T
RF AGC
IC1 M51316BP
F M DET
AUDIO DRIVER
ATT
LIM
SIF DET
PRE AMP
A G C NOISE INV
VIDEO DET
AFT
I F AGC
NOISE INV
R F AGC
TP14 AGC
TP12 V. DET OUT
T1 S. TRAP 33. 5MHz
T3 LLD 37. 5MHz
T2 AFC 39. 5MHz
T6
Q5, Q6, Q7 2SD637R
T4 SYNC 15. 625KHz
TP21 AUDIO OUT
AUDIO LEVEL
Q8 2SD1330S, T
TP13 VIDEO OUT
COLOUR LEVEL
Q2 2SB641Q, R
Q3 2SD638R, S
To 06 TERMINAL CN4
To 02 FMA CN204
CN3
VIDEO
GND
AUDIO
GND
IC3 3/4 SD
Q26 DTC144EF
Q4, Q27 2SB644R, S
Q28 2SB810H, J
Q29 DTC144EF
Q13 2SC3327A or 2SC2878A
Q14 DTC144EF
IC2 2/2
From 01 REGULATOR, CN3
CN2
-30V
GND
UNSW 12V
UNSW 45V
D6 LTZ-MR15 or LTZ-R15
HZT33-02
IC3 1/4 AFC H
IC3 2/4 AFC L
IC2 1/2
Q22 2SD637R, S
Q23 2SB641Q, R
Q24 2SD637Q, R, S
Q25 2SD637R, S
Q12 2SD637R, S
IC2 M5223P
IC3 M5224P
D14 RD5. 6EB3 or HZ6B3
IC4 M50161-392SP
CPU
VDD
TEST
K0
K1
AC
OSC OUT
OSC IN
REF
VOL
INT
D/A
VDP
B0
B1
B2
V3
V2
A1
A0
E3
E2
E1
E0
C3
C2
C1
C0
D
B3
VSS
CF5 4. 0MHz
IC5 M58653P
RA2 10KX6
RA1 220KX5
From/To 03 TIMER, CN2
DATA 3
DATA 2
DATA 1
DATA 0
STROBE
TUNER RESET
BUSY
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTES:

1. Shaded (▨) parts are critical for safety. Replace only with specified part numbers.
2. Voltages are DC-measured with a digital voltmeter during stop mode.

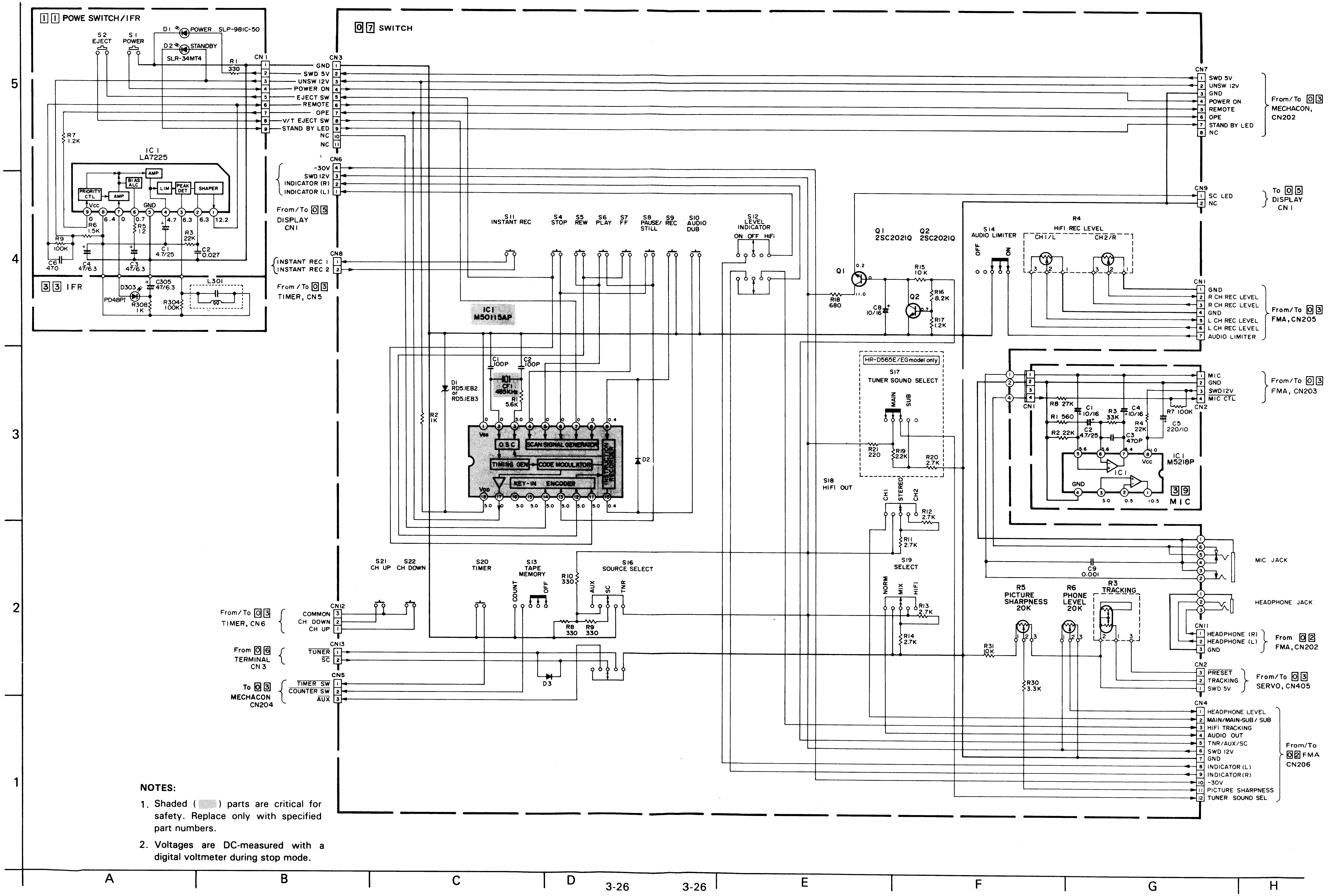
3.26 TUNER/IF CIRCUIT BOARD (HR-D565EK)


5
4
3
2
1
A
B
C
D
E
F
G
H
PU22142-1-1
TU/IF PWB
JVCH73V0
PU22142B1
TU/IF PWB ASS'Y
IF
R141
AFC
TU
MB
AGC
VL
VH
UB
SAW1
T5
T1
T2
T3
T4
T6
IC1
IC3
IC4
IC5
CN1
CN2
CN3
CF1
CF2
CF3
TP14
AGC
TP12
DET OUT
TP13
VIDEO
TP21
AUDIO
R10
R32
R40
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q22
Q23
Q24
Q25
Q26
Q27
Q28
Q29
L1
L3
L4
L5
L6
L7
L8

R 40
AUDIO LEVEL

R 32
COLOUR LEVEL

3.27 SWITCH, MIC AND POWER SWITCH SCHEMATIC DIAGRAMS

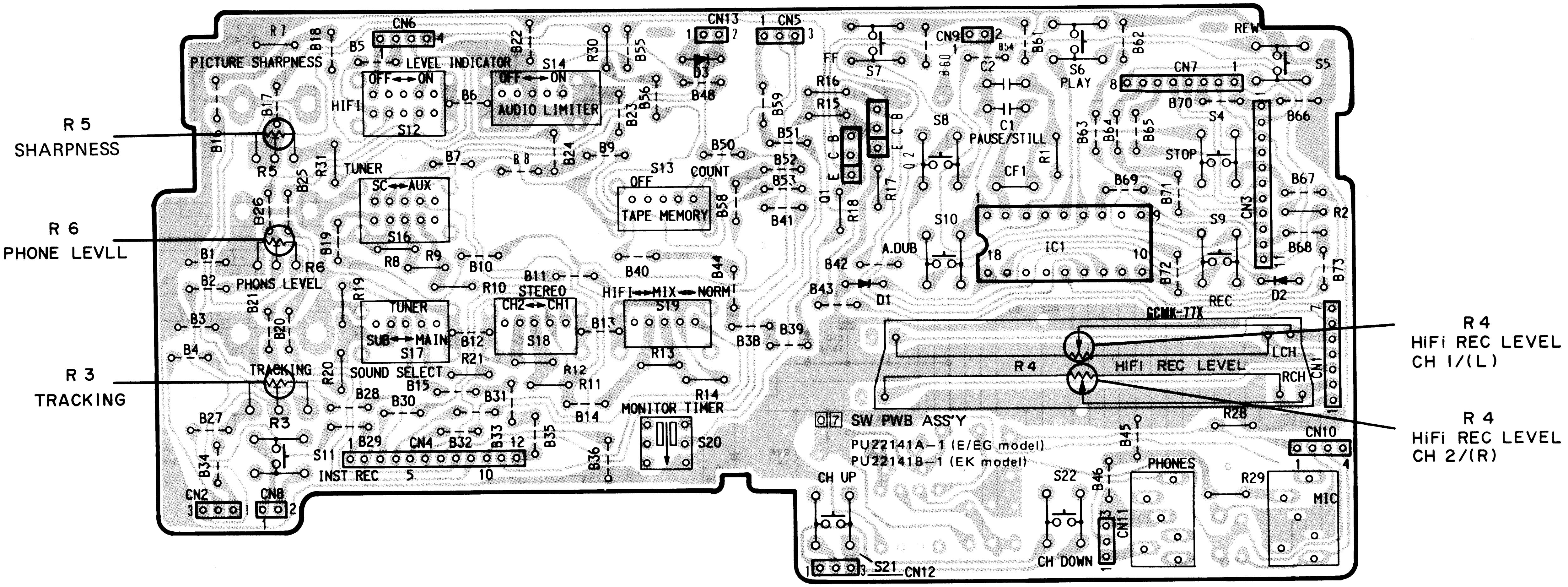

11 POWE SWITCH/IFR
S2 EJECT
S1 POWER
D1 POWER SLP-981C-50
D2 STANDBY
SLR-34MT4
R1 330
CN1
R7 1.2K
IC1 LA7225
AMP
BIAS ALC
LIM
PEAK DET
SHAPER
PRIORITY CTL
Vcc
GND
R6 1.5K
R5 12
R3 22K
C1 4.7/25
C2 0.027
R9 100K
C6 470
C4 47/6.3
C3 47/6.3
33 IFR
D303
C305 47/6.3
L301
PD48P1
R308 1K
R304 100K
07 SWITCH
CN3
GND
SWD 5V
UNSW 12V
POWER ON
EJECT SW
REMOTE
OPE
V/T EJECT SW
STAND BY LED
NC
CN6
-30V
SWD 12V
INDICATOR (R)
INDICATOR (L)
From/To 05 DISPLAY CN1
CN8
INSTANT REC 1
INSTANT REC 2
From/To 03 TIMER, CN5
S11 INSTANT REC
S4 STOP
S5 REW
S6 PLAY
S7 FF
S8 PAUSE/STILL
S9 REC
S10 AUDIO DUB
S12 LEVEL INDICATOR
ON OFF HiFi
IC1 M50115AP
C1 100P
C2 100P
CF1 455KHz
R1 5.6K
D1 RD5.1EB2 or RD5.1EB3
R2 1K
Vss
OSC
SCAN SIGNAL GENERATOR
TIMING GEN
CODE MODULATOR
KEY-IN ENCODER
INSTRUCTION DECODER
VDD
D2
Q1 2SC2021Q
Q2 2SC2021Q
R18 680
C8 10/16
R15 10K
R16 8.2K
R17 1.2K
S14 AUDIO LIMITER
OFF ON
R4 HiFi REC LEVEL
CH1/L
CH2/R
CN7
SWD 5V
UNSW 12V
GND
POWER ON
REMOTE
OPE
STAND BY LED
NC
From/To 03 MECHACON, CN202
CN9
SC LED
NC
To 05 DISPLAY CN1
CN1
GND
R CH REC LEVEL
R CH REC LEVEL
GND
L CH REC LEVEL
L CH REC LEVEL
AUDIO LIMITER
From/To 03 FMA, CN205
HR-D565E/EGmodel only
S17 TUNER SOUND SELECT
MAIN SUB
R21 220
R19 22K
R20 2.7K
S18 HIFI OUT
CH1 STEREO CH2
R12 2.7K
R11 2.7K
S19 SELECT
NORM MIX HIFI
R13 2.7K
R14 2.7K
MIC
GND
SWD12V
MIC CTL
From/To 03 FMA, CN203
CN1
CN2
R8 27K
R1 560
C1 10/16
R3 33K
C4 10/16
R7 100K
C2 4.7/25
R4 22K
C5 220/10
R2 22K
C3 470P
IC1 M5218P
Vcc
GND
39 MIC
MIC JACK
C9 0.001
HEADPHONE JACK
S21 CH UP
S22 CH DOWN
S20 TIMER
S13 TAPE MEMORY
COUNT OFF
R10 330
S16 SOURCE SELECT
AUX SC TNR
R8 330
R9 330
D3
R5 PICTURE SHARPNESS 20K
R6 PHONE LEVEL 20K
R3 TRACKING
R31 10K
R30 3.3K
From/To 03 TIMER, CN6
CN12
COMMON
CH DOWN
CH UP
From 06 TERMINAL CN3
CN13
TUNER
SC
To 03 MECHACON CN204
CN5
TIMER SW
COUNTER SW
AUX
CN11
HEADPHONE (R)
HEADPHONE (L)
GND
From 02 FMA, CN202
CN2
PRESET
TRACKING
SWD 5V
From/To 03 SERVO, CN405
CN4
HEADPHONE LEVEL
MAIN/MAIN-SUB/SUB
HIFI TRACKING
AUDIO OUT
TNR/AUX/SC
SWD 12V
GND
INDICATOR (L)
INDICATOR (R)
-30V
PICTURE SHARPNESS
TUNER SOUND SEL
From/To 02 FMA CN206
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTES:

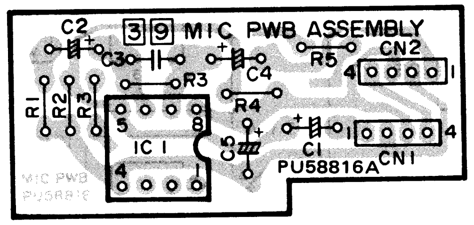
1. Shaded (▨) parts are critical for safety. Replace only with specified part numbers.
2. Voltages are DC-measured with a digital voltmeter during stop mode.

3.28 SWITCH, MIC AND POWER SWITCH CIRCUIT BOARDS

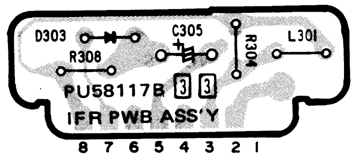
– SWITCH –


R 5
SHARPNESS
R 6
PHONE LEVLL
R 3
TRACKING
R 4
HiFi REC LEVEL
CH 1/(L)
R 4
HiFi REC LEVEL
CH 2/(R)
PICTURE SHARPNESS
LEVEL INDICATOR
OFF↔ON
HIFI
S12
S14
AUDIO LIMITER
TUNER
SC↔AUX
S16
S13
OFF
TAPE MEMORY
COUNT
PHONS LEVEL
TRACKING
STEREO
CH2↔CH1
S18
HIFI↔MIX↔NORM
S19
SUB↔MAIN
S17
SOUND SELECT
MONITOR TIMER
S20
S11
INST REC
CN4
CN2
CN8
CN6
CN13
CN5
CN9
CN7
CN3
CN1
CN10
CN11
CN12
FF
S7
S6
PLAY
REW
S5
S8
PAUSE/STILL
STOP
S4
S10
A.DUB
IC1
S9
REC
GCMK-77X
R 4
HIFI REC LEVEL
LCH
RCH
07 SW PWB ASS'Y
PU22141A–1 (E/EG model)
PU22141B–1 (EK model)
CH UP
S21
CH DOWN
S22
PHONES
MIC

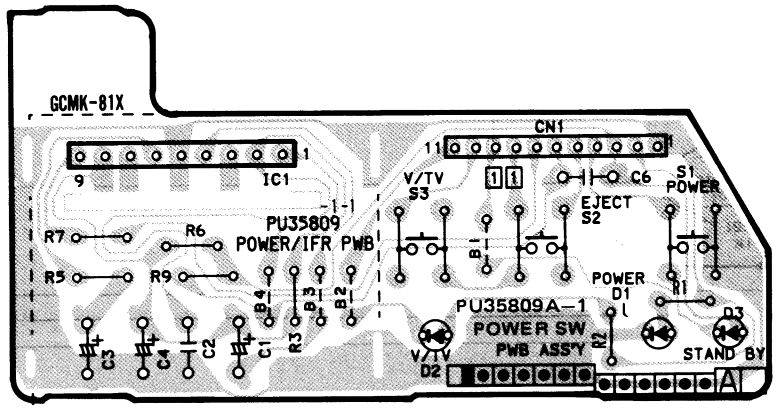
– MIC –


39 MIC PWB ASSEMBLY
PU58816A
CN1
CN2
IC 1

–IFR–


PU58117B 33
IFR PWB ASS'Y
8 7 6 5 4 3 2 1

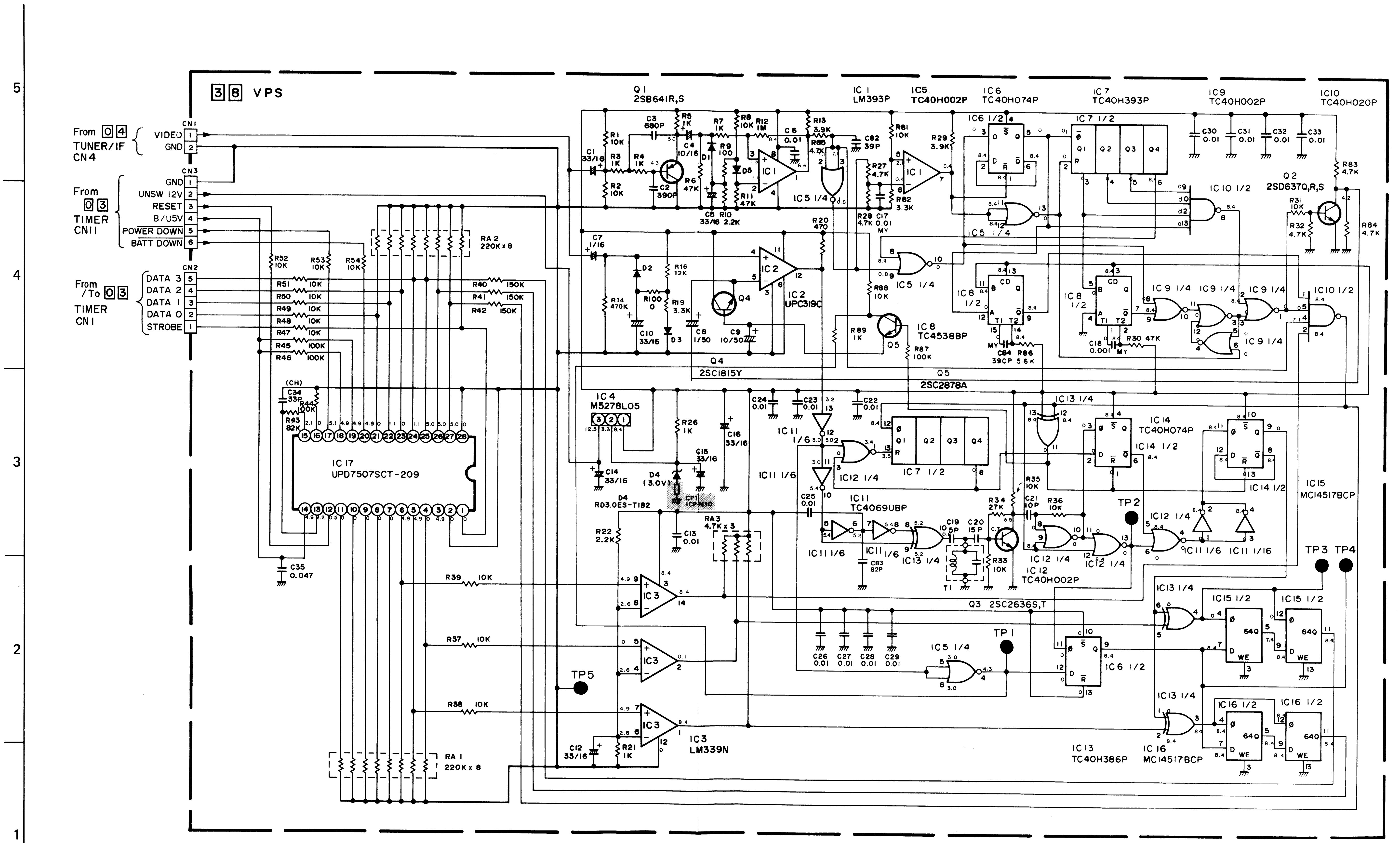
–POWER SW–


GCMK-81X
CN1
IC1
PU35809
POWER/IFR PWB
V/TV
S3
11
EJECT
S2
S1
POWER
POWER
D1
PU35809A–1
POWER SW
PWB ASS'Y
V/TV
D2
STAND BY
D3

– Mode Shift Table –

KEY / MODE	EJECT	STOP	FF	REW	PLAY	PAUSE	REC + PAUSE	AD + PAUSE	PLAY + REC	PLAY + AD	POWER SW OFF	TIMER SW ON	ONE TOUCH REC
EJECT	EJECT										EJECT →POWER OFF	EJECT →POWER OFF	EJECT
UNLOADING	↑	STOP	FF	REW	PLAY		REC PAUSE	AD PAUSE	REC	AD	UL END →POWER OFF	UL END →POWER OFF	REC
LOADING	↑	↑			↑	STILL	↑	↑	↑	↑	↑	REC PAUSE (TIMER STANDBY →POWER OFF)	↑
STOP	↑	↑	FF	REW	↑		↑	↑	↑	↑	POWER OFF	POWER OFF	↑
FF	↑	↑	↑	↑	↑		↑	↑	↑	↑	STOP→ POWER OFF	STOP→ POWER OFF	↑
REW	↑	↑	↑	↑	↑		↑	↑	↑	↑	↑	↑	↑
PLAY	↑	↑	Search FF	Search REW	↑	STILL	↑	↑	↑	↑	UL END →POWER OFF	BACK SPACE→ TIMER STANDBY →POWER OFF	↑
STILL	↑	↑	↑	↑	↑	Flame Adbance	↑	↑	↑	↑	↑	↑	↑
REC		↑				REC PAUSE	↑		↑		↑	↑	↑
AD		↑				AD PAUSE	↑	AD PAUSE	↑	AD	↑	↑	↑
REC PAUSE		↑			REC	REC PAUSE	↑		↑		↑	↑	↑
AD PAUSE		↑			AD	AD PAUSE	↑	AD PAUSE	↑	AD	↑	↑	↑
(Not Scale) One Touch REC		↑									↑	TIMER SANDBY →POWER OFF	↑
Timer REC											↑		

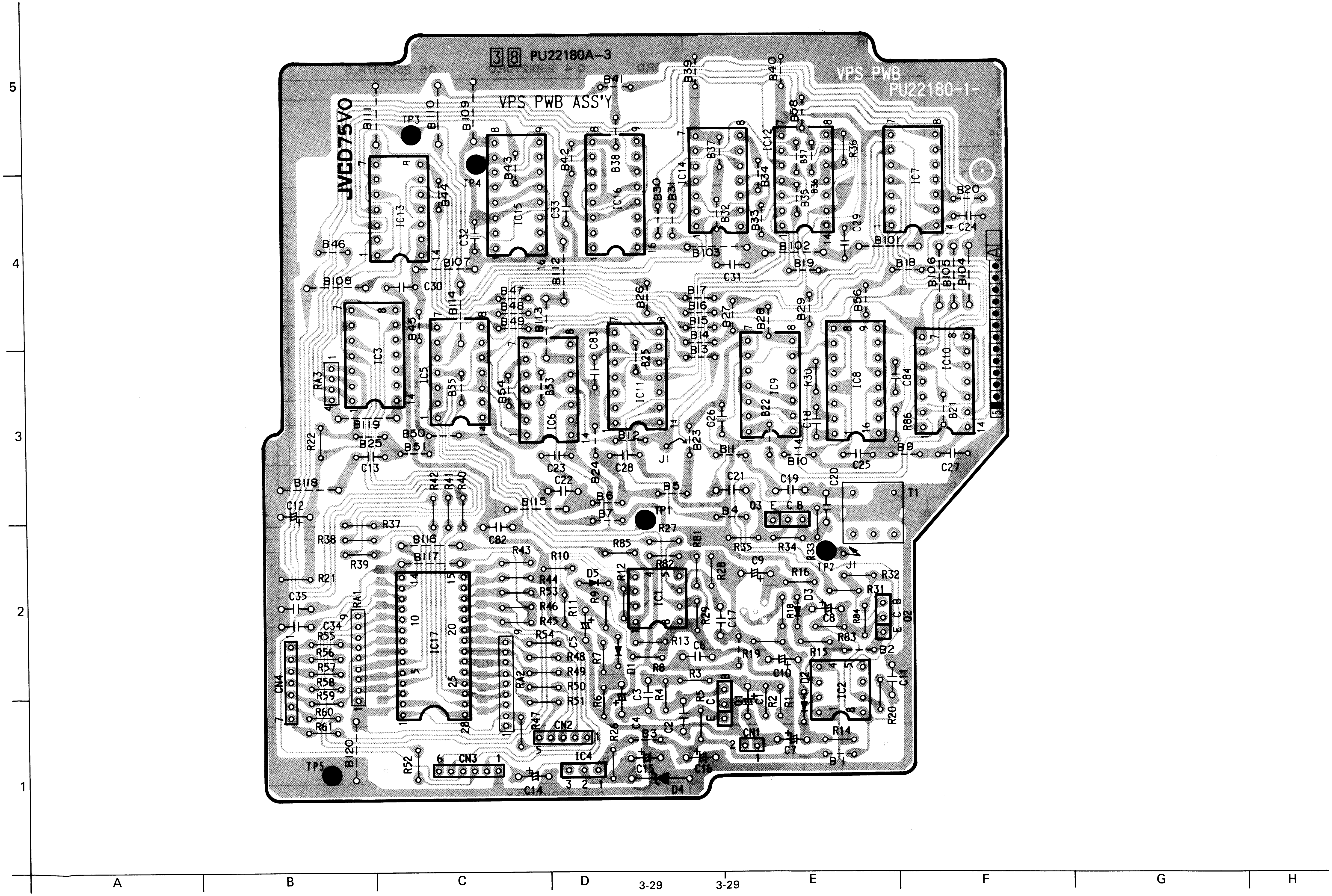
3.29 VPS SCHEMATIC DIAGRAM (HR-D565E/EG only)


38 VPS
From 04 TUNER/IF CN4
CN1
VIDEO
GND
From 03 TIMER CN11
CN3
GND
UNSW 12V
RESET
B/U5V
POWER DOWN
BATT DOWN
From /To 03 TIMER CN1
CN2
DATA 3
DATA 2
DATA 1
DATA 0
STROBE
Q1 2SB641R,S
IC1 LM393P
IC5 TC40H002P
IC6 TC40H074P
IC7 TC40H393P
IC9 TC40H002P
IC10 TC40H020P
IC2 UPC319C
Q4 2SC1815Y
Q5 2SC2878A
IC8 TC4538BP
Q2 2SD637Q,R,S
RA2 220K x 8
RA1 220K x 8
IC4 M5278L05
IC17 UPD7507SCT-209
D4 RD3.0ES-T1B2
CP1 ICP-N10
RA3 4.7K x 3
IC3 LM339N
IC11 TC4069UBP
IC12 TC40H002P
IC13 TC40H386P
IC14 TC40H074P
IC15 MC14517BCP
IC16 MC14517BCP
Q3 2SC2636S,T
TP1
TP2
TP3
TP4
TP5
5
4
3
2
1
A
B
C
D
E
F
G
H

NOTES:

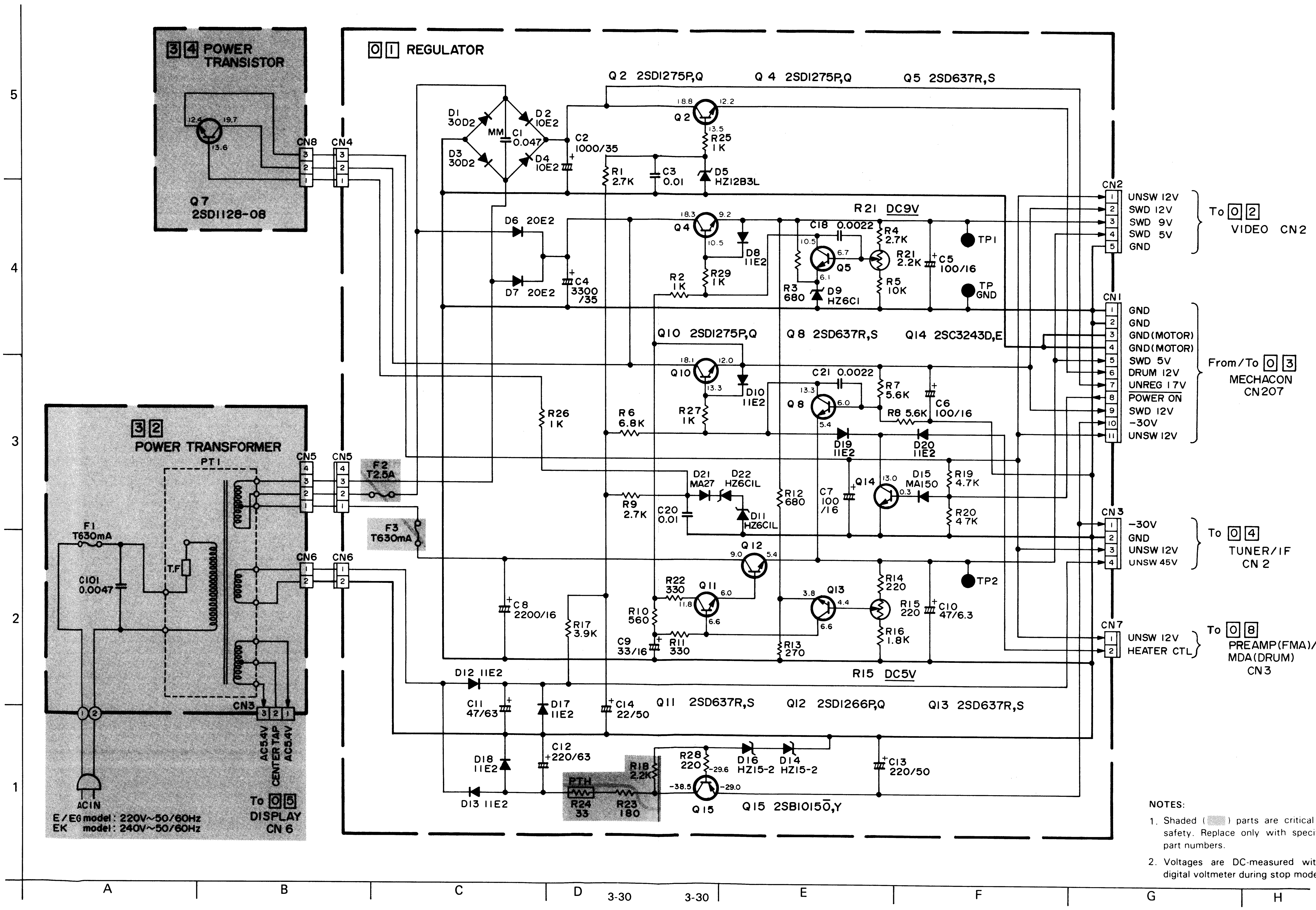
1. Shaded (▨) parts are critical for safety. Replace only with specified part numbers.
2. Voltages are DC-measured with a digital voltmeter during stop mode.

3.30 VPS CIRCUIT BOARD (HR-D565E/EG only)


PU22180A-3
VPS PWB ASS'Y
VPS PWB
PU22180-1-
JVCD75VO
IC1
IC2
IC3
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC4
CN1
CN2
CN3
CN4
TP1
TP2
TP3
TP4
TP5
T1
Q1
Q2
Q3
D1
D2
D3
D4
D5
J1
RA1
RA2
RA3
5
4
3
2
1
A
B
C
D
E
F
G
H

REGULATOR REGULAEOR

3.31 POWER TRANSFORMER, REGULATOR AND POWER TRANSISTOR SCHEMATIC DIAGRAMS



3 4 POWER TRANSISTOR
12.4
19.7
13.6
Q7
2SD1128-08
CN8
CN4
0 1 REGULATOR
Q2 2SD1275P,Q
Q4 2SD1275P,Q
Q5 2SD637R,S
D1 30D2
D2 10E2
D3 30D2
D4 10E2
MM
C1 0.047
C2 1000/35
R1 2.7K
C3 0.01
18.8
12.2
13.5
R25 1K
D5 HZ12B3L
D6 20E2
D7 20E2
C4 3300/35
18.3
9.2
10.5
D8 11E2
R2 1K
R29 1K
R21 DC9V
C18 0.0022
R4 2.7K
6.7
R21 2.2K
C5 100/16
R3 680
6.1
D9 HZ6C1
R5 10K
TP1
TP GND
Q10 2SD1275P,Q
Q8 2SD637R,S
Q14 2SC3243D,E
18.1
12.0
13.3
D10 11E2
C21 0.0022
R7 5.6K
C6 100/16
R8 5.6K
5.4
D19 11E2
D20 11E2
R26 1K
R6 6.8K
R27 1K
D21 MA27
D22 HZ6C1L
D11 HZ6C1L
R9 2.7K
C20 0.01
R12 680
C7 100/16
Q14
13.0
0.3
D15 MA150
R19 4.7K
R20 4.7K
Q12
9.0
5.4
TP2
R22 330
Q11
11.8
6.0
6.6
R10 560
C9 33/16
R11 330
R13 270
3.8
Q13
4.4
6.6
R14 220
R15 220
C10 47/6.3
R16 1.8K
R15 DC5V
C8 2200/16
R17 3.9K
D12 11E2
C11 47/63
D17 11E2
C14 22/50
Q11 2SD637R,S
Q12 2SD1266P,Q
Q13 2SD637R,S
C12 220/63
D18 11E2
D13 11E2
PTH
R24 33
R23 180
R18 2.2K
R28 220
-29.6
D16 HZ15-2
D14 HZ15-2
-38.5
-29.0
Q15
Q15 2SB1015O,Y
C13 220/50
CN2
1 UNSW 12V
2 SWD 12V
3 SWD 9V
4 SWD 5V
5 GND
To 0 2 VIDEO CN2
CN1
1 GND
2 GND
3 GND(MOTOR)
4 GND(MOTOR)
5 SWD 5V
6 DRUM 12V
7 UNREG 17V
8 POWER ON
9 SWD 12V
10 -30V
11 UNSW 12V
From/To 0 3 MECHACON CN207
CN3
1 -30V
2 GND
3 UNSW 12V
4 UNSW 45V
To 0 4 TUNER/IF CN 2
CN7
1 UNSW 12V
2 HEATER CTL
To 0 8 PREAMP(FMA)/ MDA(DRUM) CN3
3 2 POWER TRANSFORMER
PT1
CN5
CN5
F2 T2.5A
F3 T630mA
F1 T630mA
C101 0.0047
T.F
CN6
CN6
CN3
AC5.4V
CENTER TAP
AC5.4V
1
2
ACIN
E/EG model: 220V~50/60Hz
EK model: 240V~50/60Hz
To 0 5 DISPLAY CN 6
5
4
3
2
1
A
B
C
D
E
F
G
H

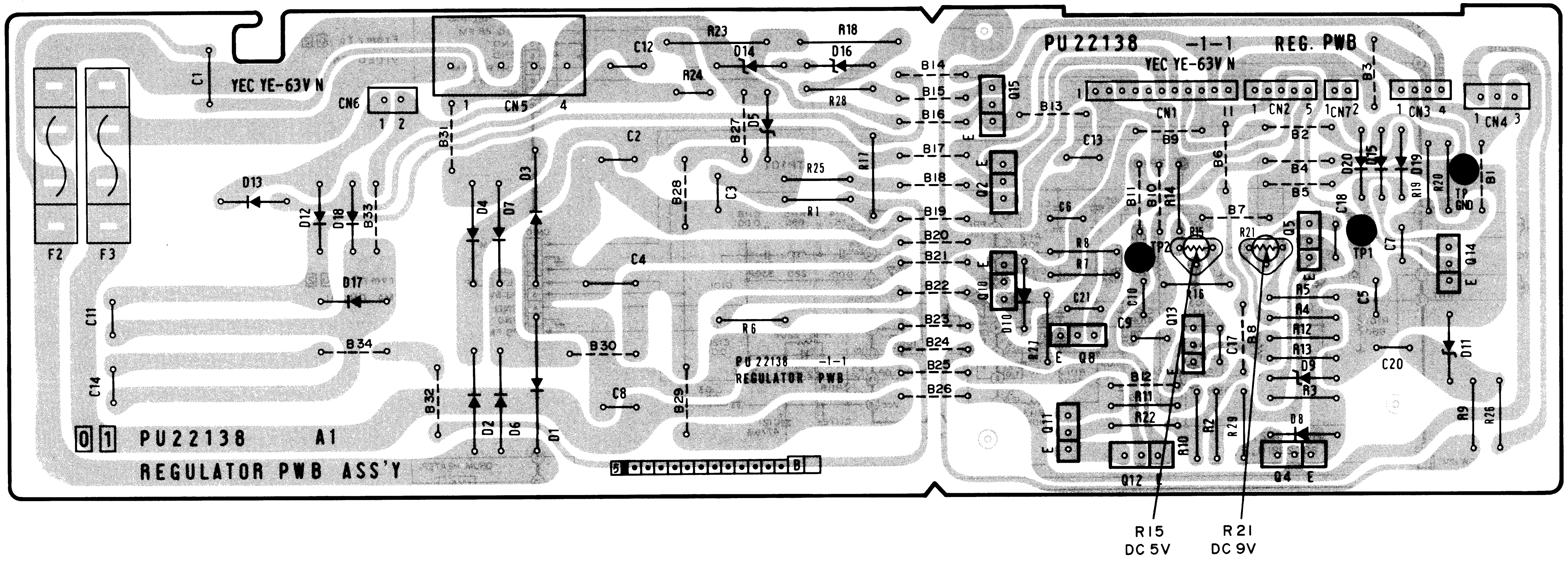
NOTES:

1. Shaded (▨) parts are critical for safety. Replace only with specified part numbers.
2. Voltages are DC-measured with a digital voltmeter during stop mode.

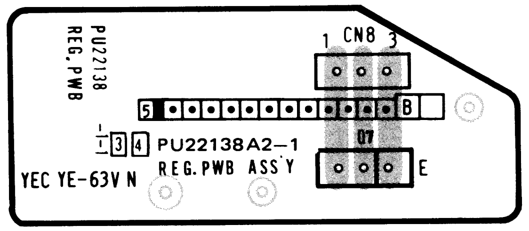
3.32 POWER TRANSFORMER, REGULATOR AND POWER TRANSISTOR CIRCUIT BOARDS

5
4
3
2
1

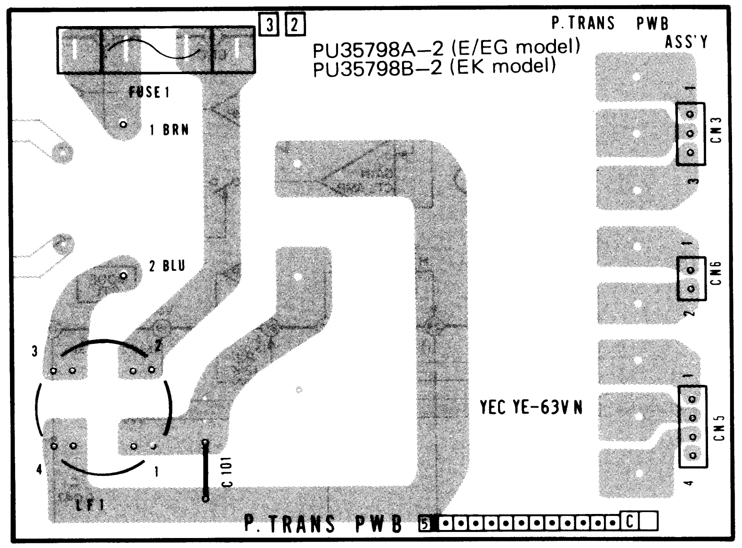
—REGULATOR—


F2
F3
C1
YEC YE-63V N
CN6
1 2
CN5
1 4
C12
R23
R18
D14
D16
R24
R28
D5
B27
B31
C2
D13
D12
D18
B33
D4
D7
D3
B28
C3
R25
R1
R17
D17
C4
C11
B34
B30
R6
PU 22138 -1-1
REGULATOR PWB
C14
B32
D2
D6
D1
C8
B29
01 PU22138 A1
REGULATOR PWB ASS'Y
5 B
B14
B15
B16
B17
B18
B19
B20
B21
B22
B23
B24
B25
B26
Q15
Q2
Q10
D10
R27
Q8
E
Q11
Q12
PU 22138 -1-1 REG. PWB
YEC YE-63V N
B13
CN1
1 11
CN2
1 5
CN7
1 2
CN3
1 4
CN4
1 3
B3
B2
B4
B5
B6
B7
B9
B10
B11
C13
C6
R14
R8
R7
TP2
R15
R21
R16
C10
C21
C9
Q13
C17
B8
R5
R4
R12
R13
D9
R3
R11
R22
B12
R2
R29
R10
Q4
B8
D20
D15
D19
R19
R20
TP GND
B1
C18
Q5
TP1
C7
Q14
C5
D11
C20
R9
R26
R15
DC 5V
R21
DC 9V

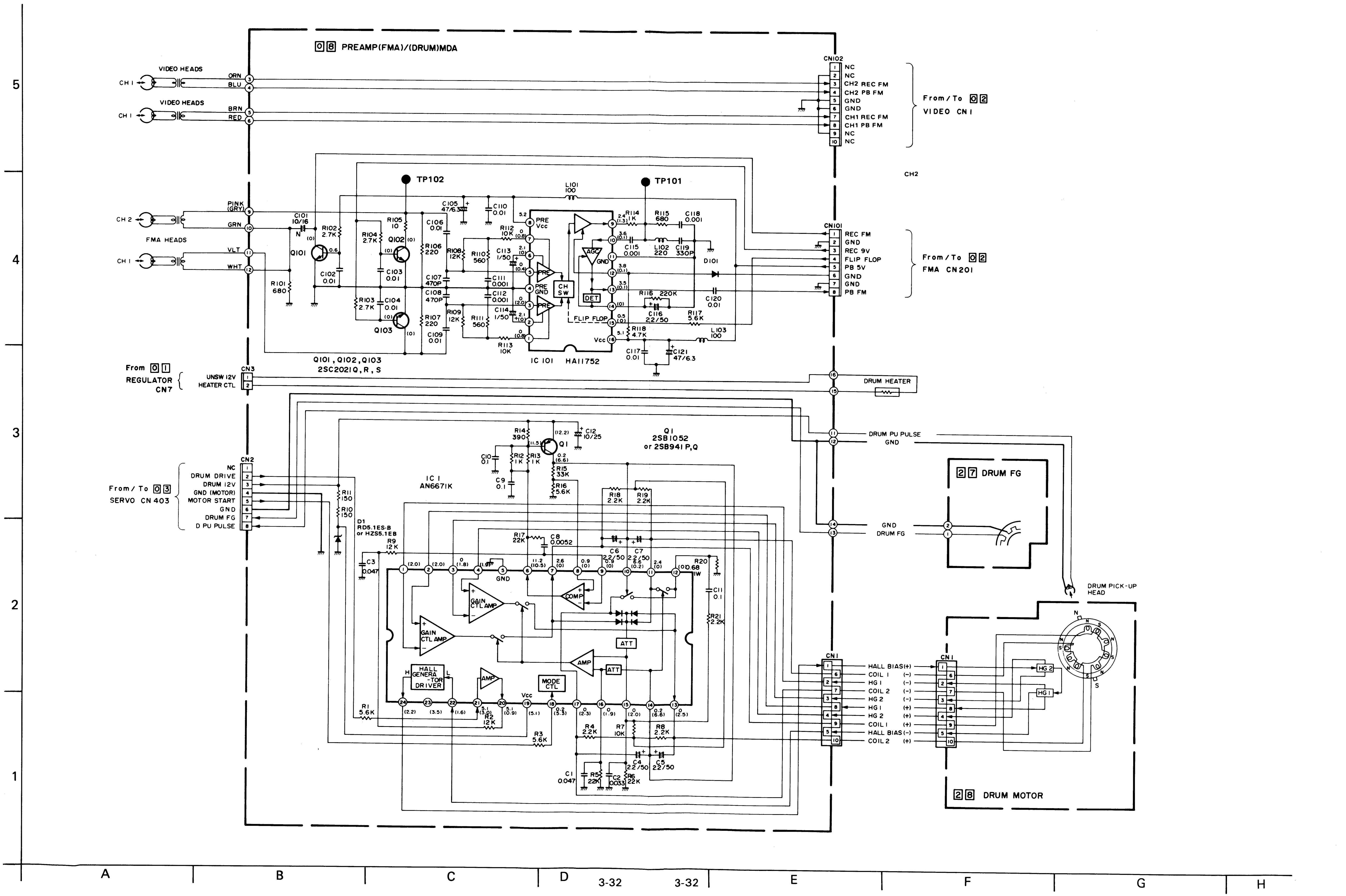
— POWER TRANSISTOR —


PU22138
REG.PWB
1 CN8 3
5 B
Q7
E
-1- 3 4 PU22138A2-1
REG.PWB ASS'Y
YEC YE-63V N

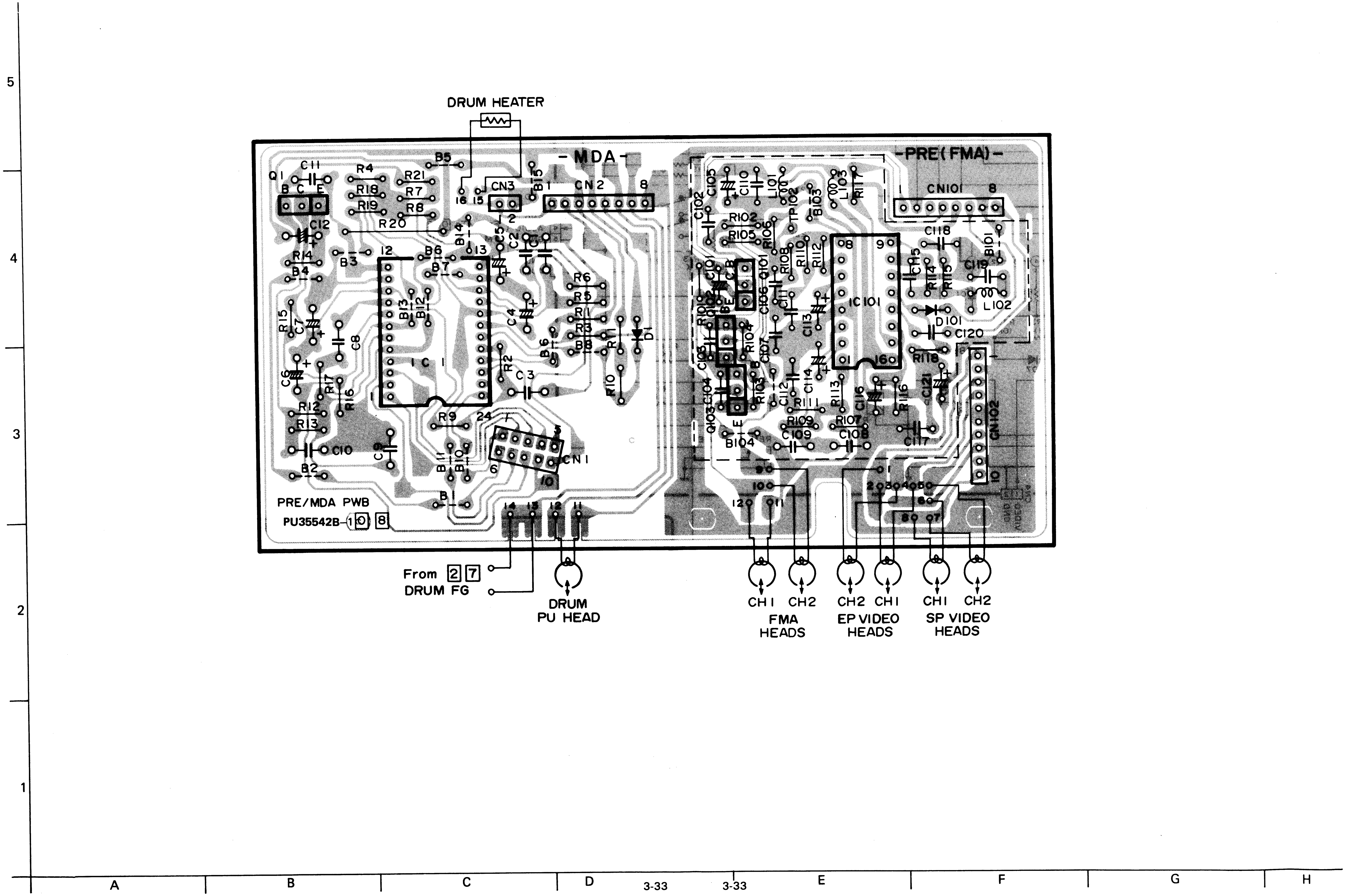
—POWER TRANSFORMER—


3 2
P.TRANS PWB ASS'Y
PU35798A-2 (E/EG model)
PU35798B-2 (EK model)
FUSE1
1 BRN
2 BLU
3
2
4
1
LF1
C101
CN3
CN6
CN5
YEC YE-63V N
P.TRANS PWB
5 C

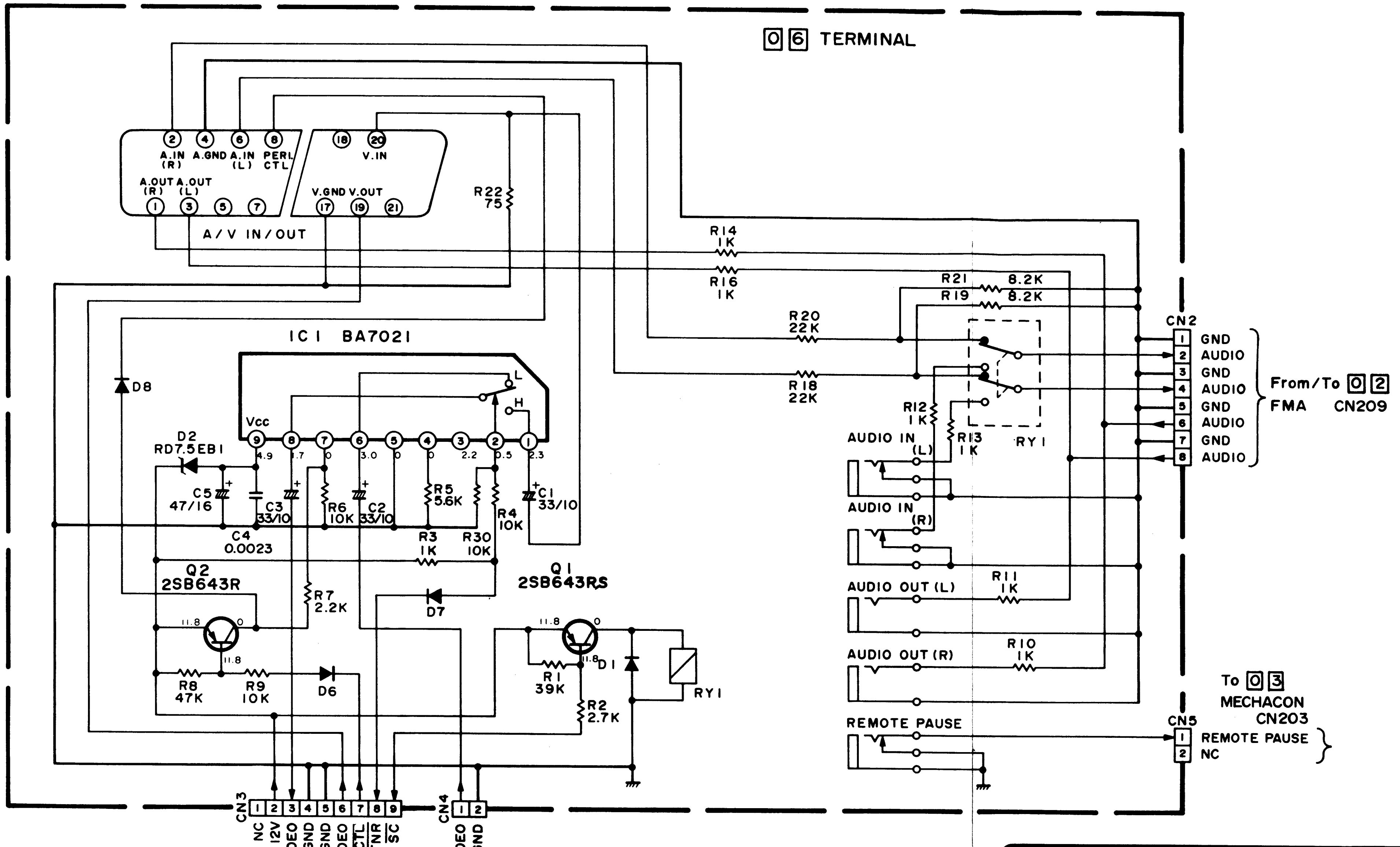
3.33 PREAMP (FMA)/MDA (DRUM) SCHEMATIC DIAGRAM


08 PREAMP(FMA)/(DRUM)MDA
VIDEO HEADS
CH I
ORN
BLU
BRN
RED
CN102
NC
CH2 REC FM
CH2 PB FM
GND
CH1 REC FM
CH1 PB FM
From/To 02
VIDEO CN I
CH2
TP102
TP101
L101 100
PINK (GRY)
GRN
VLT
WHT
CH 2
FMA HEADS
C101 10/16
Q101
R101 680
R102 2.7K
C102 0.01
R104 2.7K
R105 10
Q102
C103 0.01
R103 2.7K
C104 0.01
Q103
C105 47/6.3
C106 0.01
R106 220
C107 470P
C108 470P
R107 220
C109 0.01
R108 12K
R109 12K
R110 560
R111 560
C110 0.01
C111 0.001
C112 0.001
C113 1/50
C114 1/50
R112 10K
R113 10K
PRE Vcc
PRE
PRE GND
CH SW
AGC
GND
DET
FLIP FLOP
Vcc
R114 1K
R115 680
C118 0.001
C115 0.001
L102 220
C119 330P
R116 220K
C116 22/50
R117 5.6K
R118 4.7K
L103 100
C120 0.01
C117 0.01
C121 47/63
D101
IC 101 HA11752
Q101, Q102, Q103 2SC2021Q, R, S
CN101
REC FM
GND
REC 9V
FLIP FLOP
PB 5V
PB FM
From/To 02
FMA CN201
From 01
REGULATOR CN7
UNSW 12V
HEATER CTL
CN3
DRUM HEATER
DRUM PU PULSE
GND
R14 390
C12 10/25
Q1
Q1 2SB1052 or 2SB941 P, Q
C10 0.1
R12 1K
R13 1K
C9 0.1
R15 33K
R16 5.6K
IC 1 AN6671K
CN2
NC
DRUM DRIVE
DRUM 12V
GND (MOTOR)
MOTOR START
GND
DRUM FG
D PU PULSE
From/To 03
SERVO CN 403
R11 150
R10 150
D1 RD5.1ES-B or HZS5.1EB
R9 12K
C3 0.047
R17 22K
C8 0.0052
R18 2.2K
R19 2.2K
C6 22/50
C7 22/50
R20 0.68 1W
C11 0.1
R21 2.2K
GAIN CTL AMP
COMP
ATT
AMP
HALL GENERA-TOR DRIVER
H
L
MODE CTL
R1 5.6K
R2 12K
R3 5.6K
R4 2.2K
R7 10K
R8 2.2K
C4 22/50
C5 22/50
C1 0.047
R5 22K
C2 0.033
R6 22K
27 DRUM FG
GND
DRUM FG
DRUM PICK-UP HEAD
CN1
HALL BIAS(+)
COIL 1 (−)
HG1 (−)
COIL 2 (−)
HG2 (−)
HG1 (+)
HG2 (+)
COIL 1 (+)
HALL BIAS(−)
COIL 2 (+)
HG 2
HG 1
N
S
28 DRUM MOTOR
5
4
3
2
1
A
B
C
D
E
F
G
H

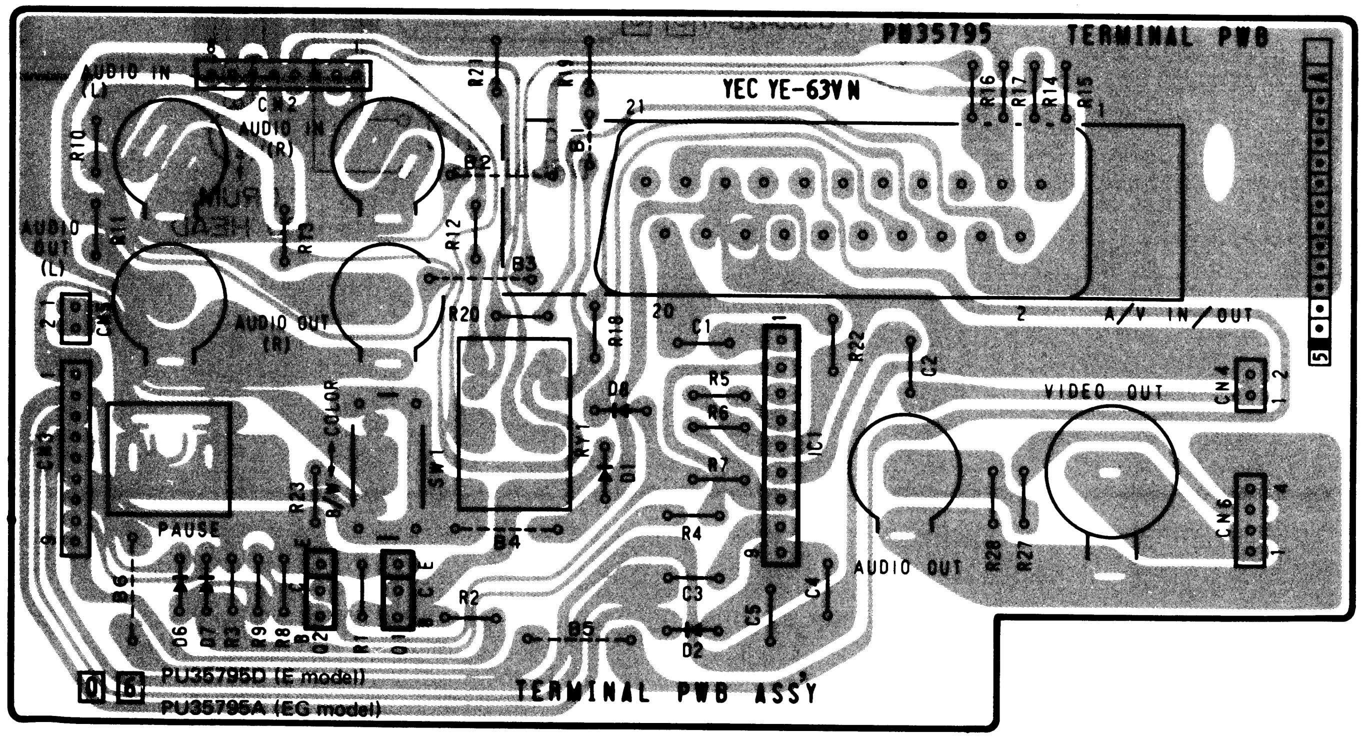
3.34 PREAMP (FMA)/MDA (DRUM) CIRCUIT BOARD


5
4
3
2
1
A
B
C
D
E
F
G
H
DRUM HEATER
-MDA-
-PRE(FMA)-
Q1
B C E
C11
C12
R4
R18
R19
R21
R7
R8
R20
B5
B15
B14
CN3
CN2
CN101
CN102
CN1
IC1
IC101
D1
D101
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
R1
R2
R3
R5
R6
R9
R10
R11
R12
R13
R14
R15
R16
R17
B1
B2
B3
B4
B6
B7
B8
B10
B11
B12
B13
Q101
Q102
Q103
L101
L102
L103
TP102
C101
C102
C103
C104
C105
C106
C107
C108
C109
C110
C111
C112
C113
C114
C115
C116
C117
C118
C119
C120
C121
R101
R102
R103
R104
R105
R106
R107
R108
R109
R110
R111
R112
R113
R114
R115
R116
R117
R118
B101
B103
B104
PRE/MDA PWB
PU35542B-1 0 8
From 2 7
DRUM FG
DRUM
PU HEAD
CH1
CH2
FMA
HEADS
CH2
CH1
EP VIDEO
HEADS
CH1
CH2
SP VIDEO
HEADS

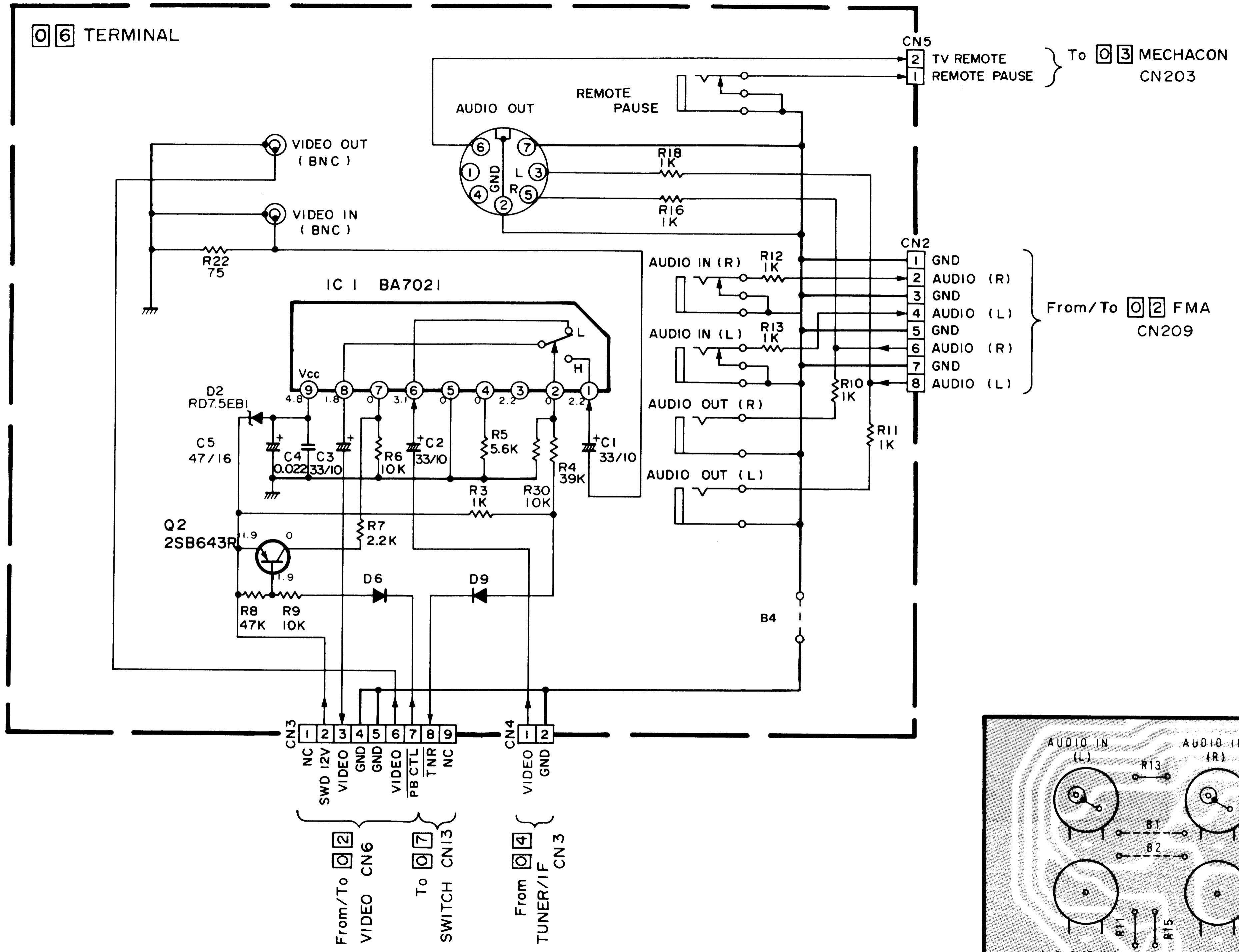
3.35 TERMINAL SCHEMATIC DIAGRAM AND CIRCUIT BOARD (HR-D565E/EG)


06 TERMINAL
A.IN (R)
A.GND
A.IN (L)
PERL CTL
V.IN
A.OUT (R)
A.OUT (L)
V.GND
V.OUT
A/V IN/OUT
R22 75
R14 1K
R16 1K
R21 8.2K
R19 8.2K
R20 22K
R18 22K
R12 1K
R13 1K
RY1
IC1 BA7021
Vcc
D8
D2 RD7.5EB1
C5 47/16
C3 33/10
R6 10K
C2 33/10
R5 5.6K
R4 10K
C1 33/10
C4 0.0023
R3 1K
R30 10K
Q2 2SB643R
Q1 2SB643RS
R7 2.2K
D7
R8 47K
R9 10K
D6
R1 39K
D1
R2 2.7K
AUDIO IN (L)
AUDIO IN (R)
AUDIO OUT (L)
R11 1K
AUDIO OUT (R)
R10 1K
REMOTE PAUSE
CN2
GND
AUDIO
GND
AUDIO
GND
AUDIO
GND
AUDIO
From/To 02 FMA CN209
To 03 MECHACON CN203
CN5
REMOTE PAUSE
NC
CN3
NC
SWD 12V
VIDEO
GND
GND
VIDEO
PB CTL
TNR
SC
CN4
VIDEO
GND
From/To 02 VIDEO CN6
To 07 SWITCH CN13
From 04 TUNER/IF CN3

NOTE: Voltages are DC-measured with a digital voltmeter during stop mode.

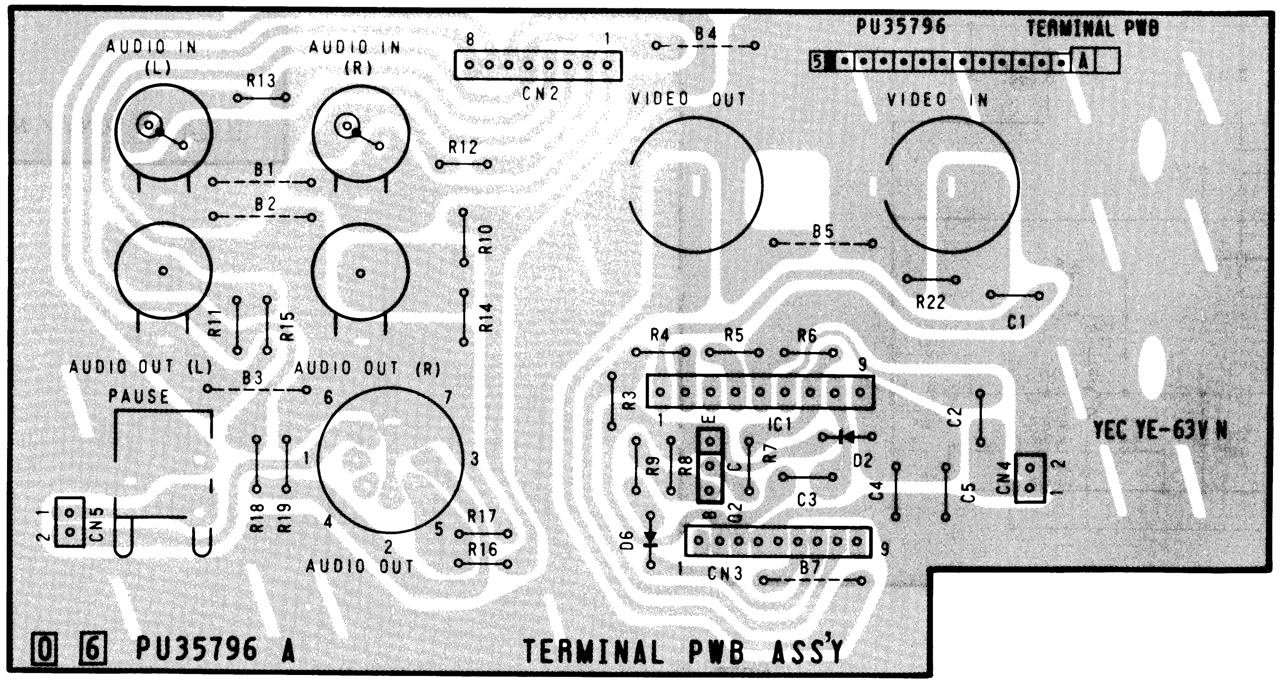

PU35795 TERMINAL PWB
YEC YE-63VN
AUDIO IN (L)
AUDIO IN (R)
AUDIO OUT (L)
AUDIO OUT (R)
A/V IN/OUT
VIDEO OUT
AUDIO OUT
PAUSE
CN2
CN4
CN5
CN6
IC1
06 PU35795D (E model)
PU35795A (EG model)
TERMINAL PWB ASSY

3.36 TERMINAL SCHEMATIC DIAGRAM AND CIRCUIT BOARD (HR-D565EK)

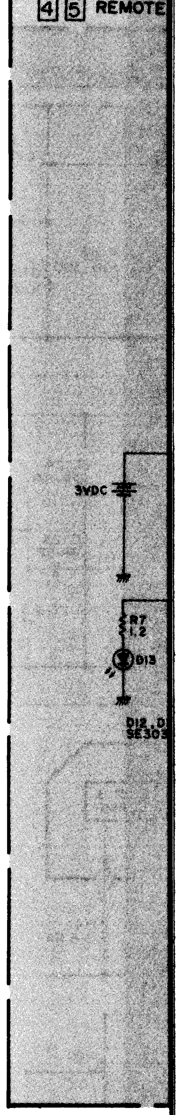

06 TERMINAL
CN5
2 TV REMOTE
1 REMOTE PAUSE
To 03 MECHACON CN203
AUDIO OUT
REMOTE PAUSE
VIDEO OUT (BNC)
VIDEO IN (BNC)
R22 75
R18 1K
R16 1K
GND
L
R
IC 1 BA7021
Vcc
L
H
4.8
1.8
0
3.1
0
2.2
2.2
2.2
D2 RD7.5EB1
C5 47/16
C4 0.022
C3 33/10
R6 10K
C2 33/10
R5 5.6K
R4 39K
C1 33/10
R3 1K
R30 10K
R7 2.2K
Q2 2SB643R
1.9
0
1.9
D6
D9
R8 47K
R9 10K
B4
AUDIO IN (R)
R12 1K
AUDIO IN (L)
R13 1K
AUDIO OUT (R)
AUDIO OUT (L)
R10 1K
R11 1K
CN2
1 GND
2 AUDIO (R)
3 GND
4 AUDIO (L)
5 GND
6 AUDIO (R)
7 GND
8 AUDIO (L)
From/To 02 FMA CN209
CN3
1 NC
2 SWD 12V
3 VIDEO
4 GND
5 GND
6 VIDEO
7 PB CTL
8 TNR
9 NC
From/To 02 VIDEO CN6
To 07 SWITCH CN13
CN4
1 VIDEO
2 GND
From 04 TUNER/IF CN3

NOTES:

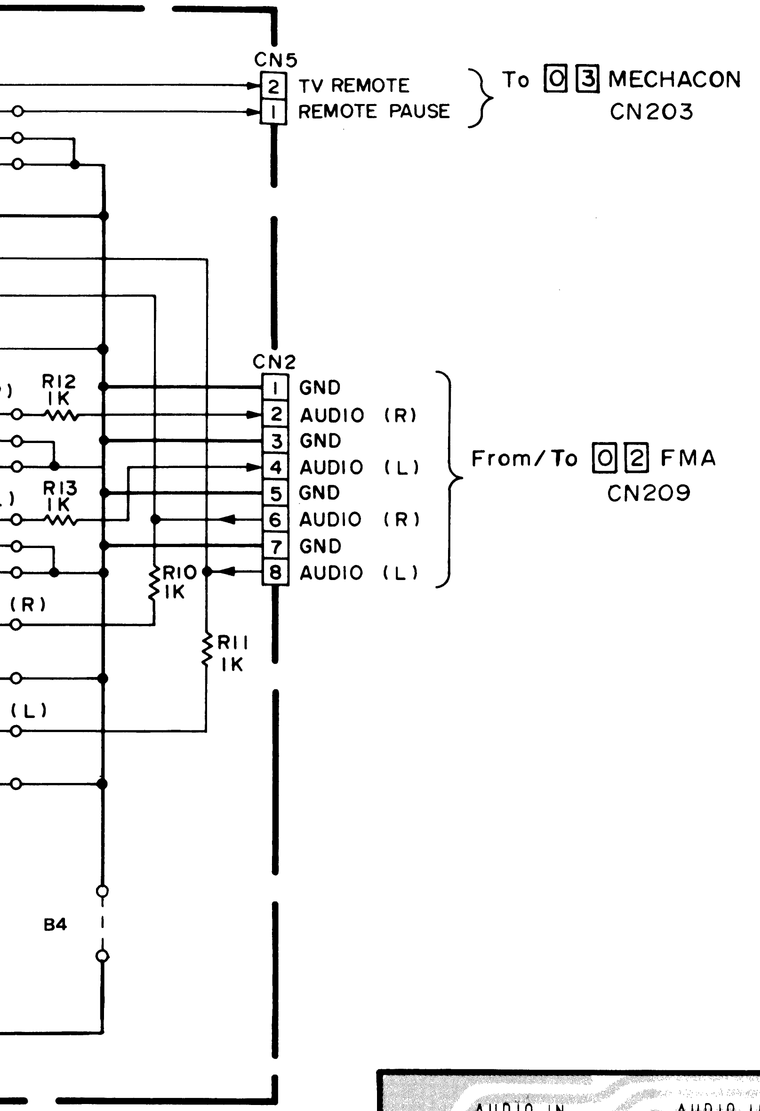
1. Shaded ( ) parts are critical for safety. Replace only with specified part numbers.
2. Voltages are DC-measured with a digital voltmeter during stop mode.

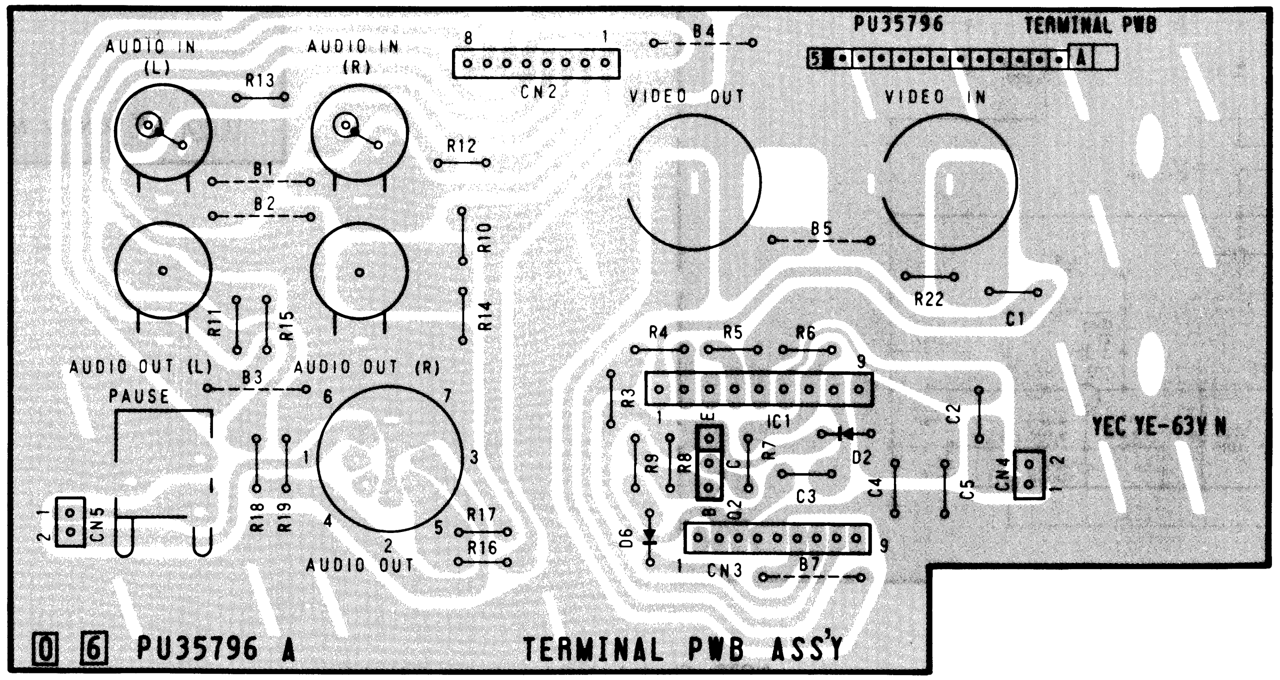

PU35796
TERMINAL PWB
AUDIO IN (L)
AUDIO IN (R)
R13
R12
CN2
8
1
B4
VIDEO OUT
VIDEO IN
B1
B2
R10
B5
R22
C1
R11
R15
R14
R4
R5
R6
9
AUDIO OUT (L)
AUDIO OUT (R)
PAUSE
B3
6
7
R3
IC1
C2
YEC YE-63V N
R9
R8
R7
D2
C3
C4
C5
CN4
Q2
CN5
R18
R19
R17
R16
AUDIO OUT
D6
CN3
B7
06 PU35796 A
TERMINAL PWB ASS'Y

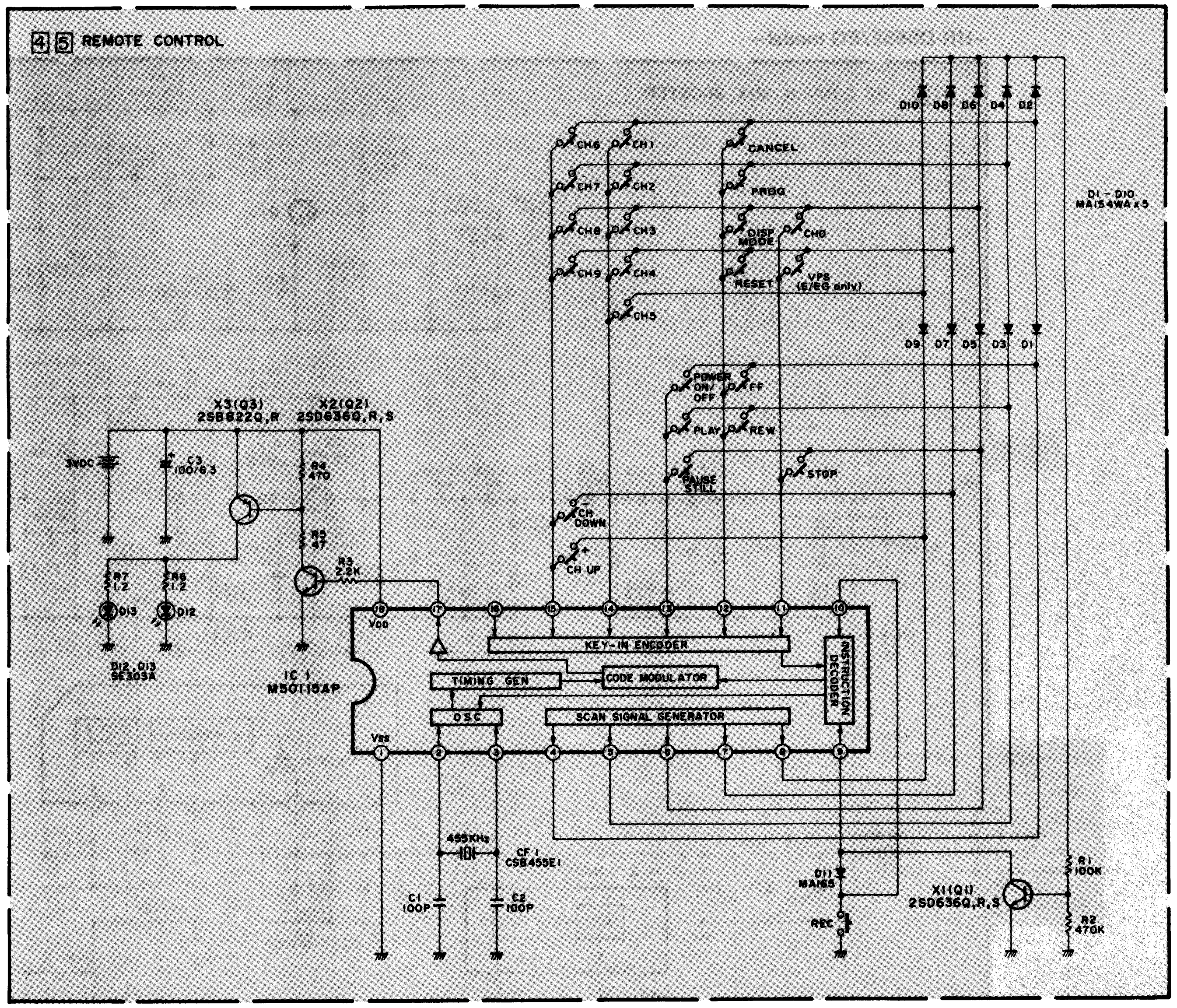
3.37 REMO


45 REMOTE
3VDC
R7 1.2
D13

3.37 REMOTE CONTROL SCHEMATIC DIAGRAM


CN5
2 TV REMOTE
1 REMOTE PAUSE
To 0 3 MECHACON CN203
CN2
1 GND
2 AUDIO (R)
3 GND
4 AUDIO (L)
5 GND
6 AUDIO (R)
7 GND
8 AUDIO (L)
From/To 0 2 FMA CN209
R12 1K
R13 1K
R10 1K
R11 1K
(R)
(L)
B4


PU35796 TERMINAL PWB
AUDIO IN (L)
AUDIO IN (R)
CN2
B4
VIDEO OUT
VIDEO IN
R13
R12
B1
B2
R10
B5
R14
R11
R15
R22
C1
R4
R5
R6
AUDIO OUT (L)
AUDIO OUT (R)
PAUSE
B3
R3
IC1
C2
YEC YE-63V N
R9
R8
R7
D2
C3
C4
C5
CN4
Q2
CN5
R18
R19
R17
R16
AUDIO OUT
D6
CN3
B7
0 6 PU35796 A
TERMINAL PWB ASS'Y

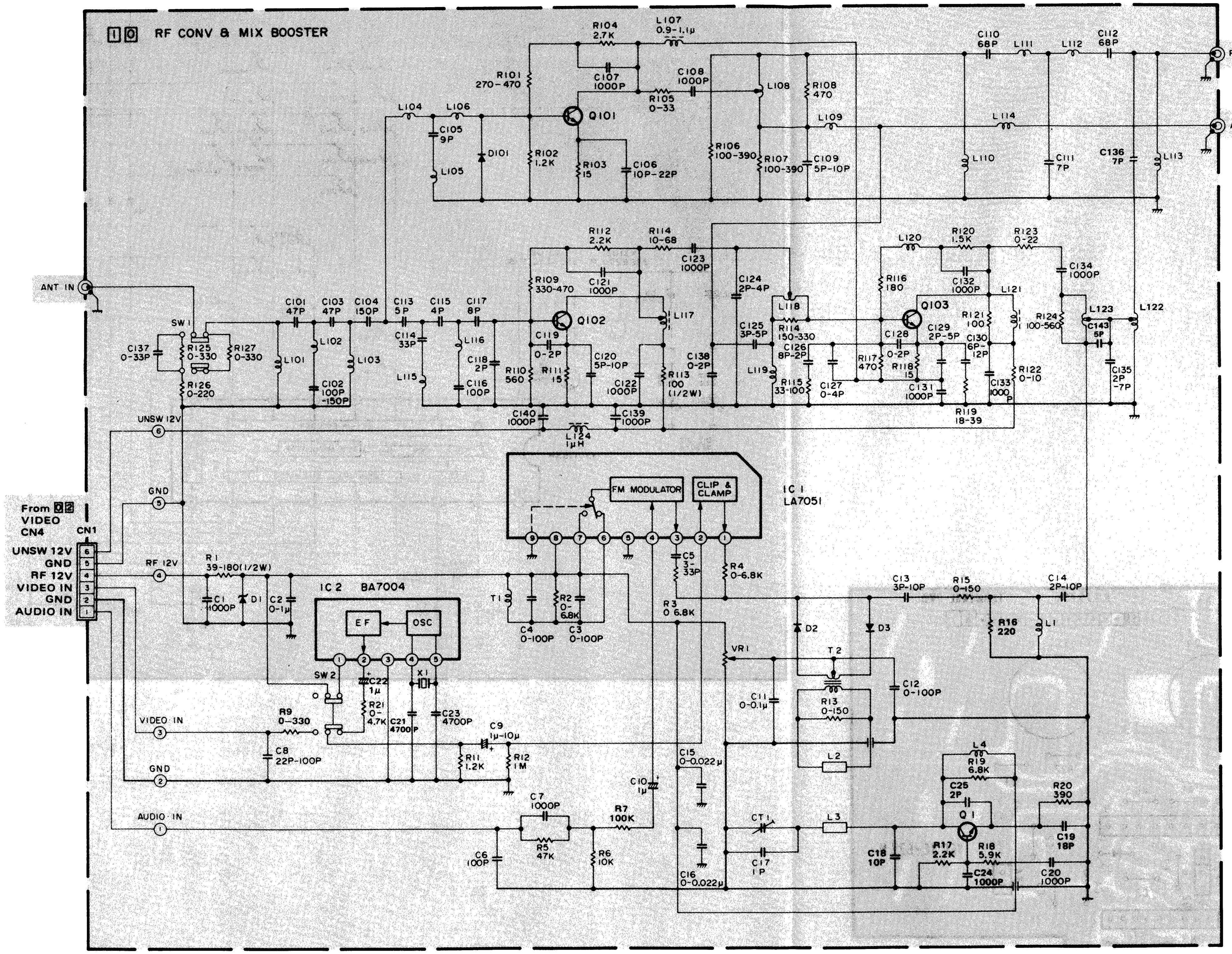

4 5 REMOTE CONTROL
D10 D8 D6 D4 D2
CH6 CH1
CANCEL
CH7 CH2
PROG
CH8 CH3
DISP MODE
CH0
CH9 CH4
RESET
VPS (E/EG only)
CH5
D9 D7 D5 D3 D1
D1 - D10 MA154WA x 5
POWER ON/OFF
FF
PLAY
REW
PAUSE STILL
STOP
CH DOWN
CH UP
X3(Q3) 2SB822Q,R
X2(Q2) 2SD636Q,R,S
3VDC
C3 100/6.3
R4 470
R5 47
R3 2.2K
R7 1.2
R6 1.2
D13
D12
D12, D13 SE303A
IC 1 M50115AP
VDD
VSS
KEY-IN ENCODER
TIMING GEN
CODE MODULATOR
OSC
SCAN SIGNAL GENERATOR
INSTRUCTION DECODER
455KHz
CF 1 CSB455E1
C1 100P
C2 100P
D11 MA165
REC
X1(Q1) 2SD636Q,R,S
R1 100K
R2 470K

critical for
h specified

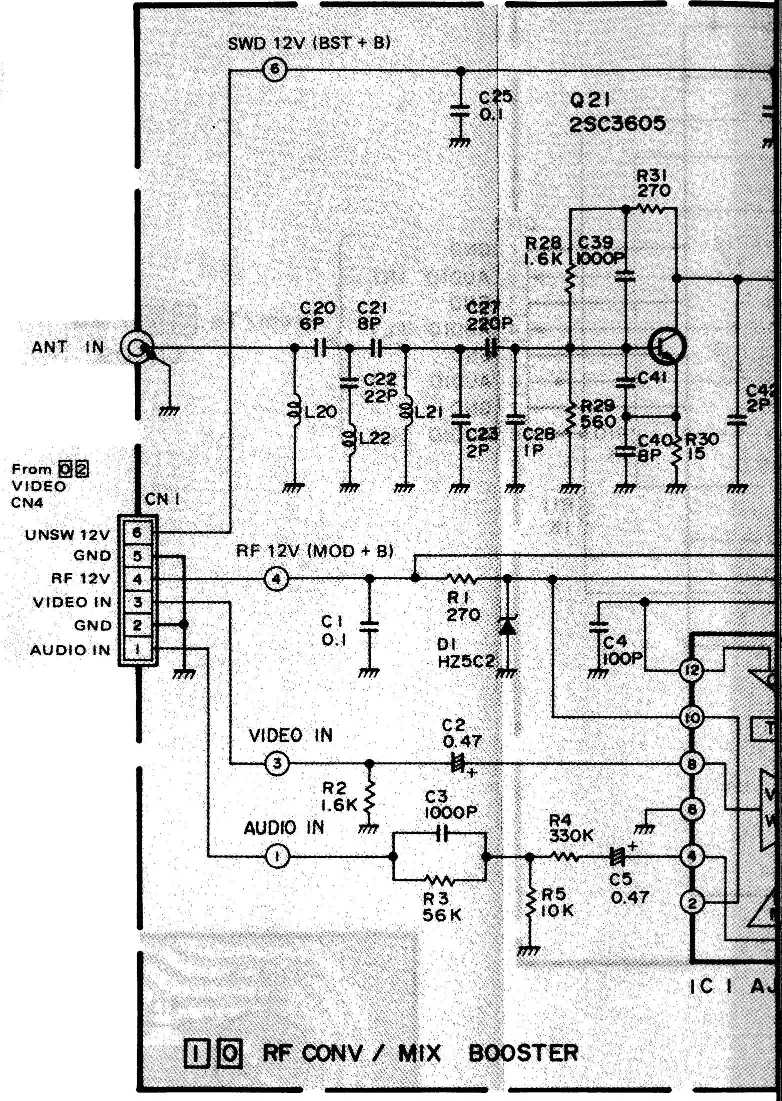
red with a
op mode.

3.38 RF CONVERTER AND MIX BOOSTER SCHEMATIC DIAGRAMS

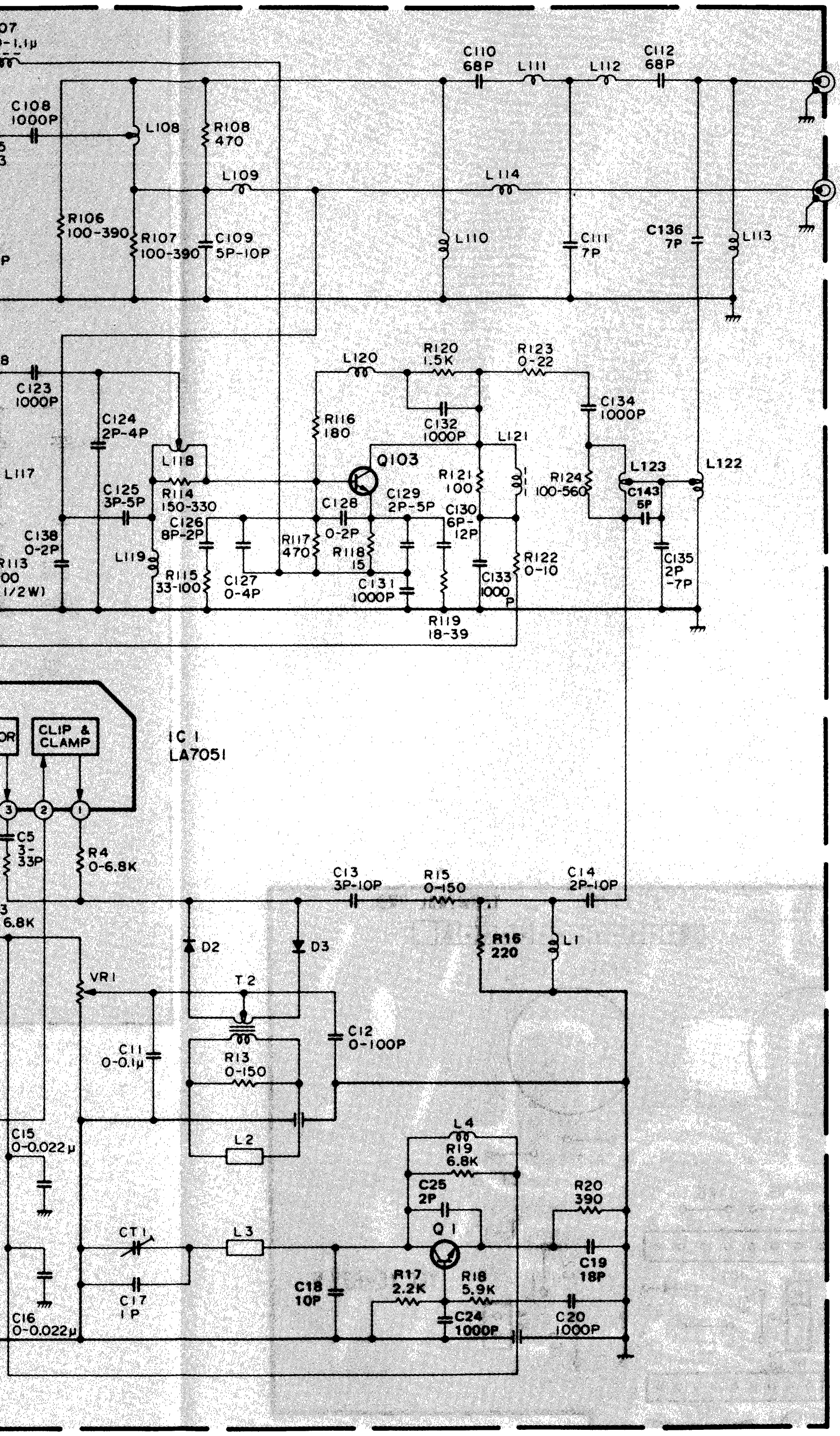
–HR-D565E/EG model–


1 0 RF CONV & MIX BOOSTER
RF OUT (To TV RECEIVER)
ANT OUT (To TUNER)
ANT IN
From 0 2 VIDEO CN4
CN1
UNSW 12V
GND
RF 12V
VIDEO IN
GND
AUDIO IN
Q101
Q102
Q103
Q1
IC 1 LA7051
FM MODULATOR
CLIP & CLAMP
IC 2 BA7004
EF
OSC
SW 1
SW 2
X1
VR1
T1
T2
CT1
D1
D2
D3
D101
R101 270-470
R102 1.2K
R103 15
R104 2.7K
R105 0-33
R106 100-390
R107 100-390
R108 470
R109 330-470
R110 560
R111 15
R112 2.2K
R113 100 (1/2W)
R114 10-68
R114 150-330
R115 33-100
R116 180
R117 470
R118 15
R119 18-39
R120 1.5K
R121 100
R122 0-10
R123 0-22
R124 100-560
R125 0-330
R126 0-220
R127 0-330
C101 47P
C102 100P-150P
C103 47P
C104 150P
C105 9P
C106 10P-22P
C107 1000P
C108 1000P
C109 5P-10P
C110 68P
C111 7P
C112 68P
C113 5P
C114 33P
C115 4P
C116 100P
C117 8P
C118 2P
C119 0-2P
C120 5P-10P
C121 1000P
C122 1000P
C123 1000P
C124 2P-4P
C125 3P-5P
C126 8P-2P
C127 0-4P
C128 0-2P
C129 2P-5P
C130 6P-12P
C131 1000P
C132 1000P
C133 1000P
C134 1000P
C135 2P-7P
C136 7P
C137 0-33P
C138 0-2P
C139 1000P
C140 1000P
C143 5P
L101
L102
L103
L104
L105
L106
L107 0.9-1.1μ
L108
L109
L110
L111
L112
L113
L114
L115
L116
L117
L118
L119
L120
L121
L122
L123
L124 1μH
R1 39-180(1/2W)
R2 0-6.8K
R3 0 6.8K
R4 0-6.8K
R5 47K
R6 10K
R7 100K
R9 0-330
R11 1.2K
R12 1M
R13 0-150
R15 0-150
R16 220
R17 2.2K
R18 5.9K
R19 6.8K
R20 390
R21 0-4.7K
C1 1000P
C2 0-1μ
C3 0-100P
C4 0-100P
C5 3-33P
C6 100P
C7 1000P
C8 22P-100P
C9 1μ-10μ
C10 1μ
C11 0-0.1μ
C12 0-100P
C13 3P-10P
C14 2P-10P
C15 0-0.022μ
C16 0-0.022μ
C17 1P
C18 10P
C19 18P
C20 1000P
C21 4700P
C22 1μ
C23 4700P
C24 1000P
C25 2P
L1
L2
L3
L4

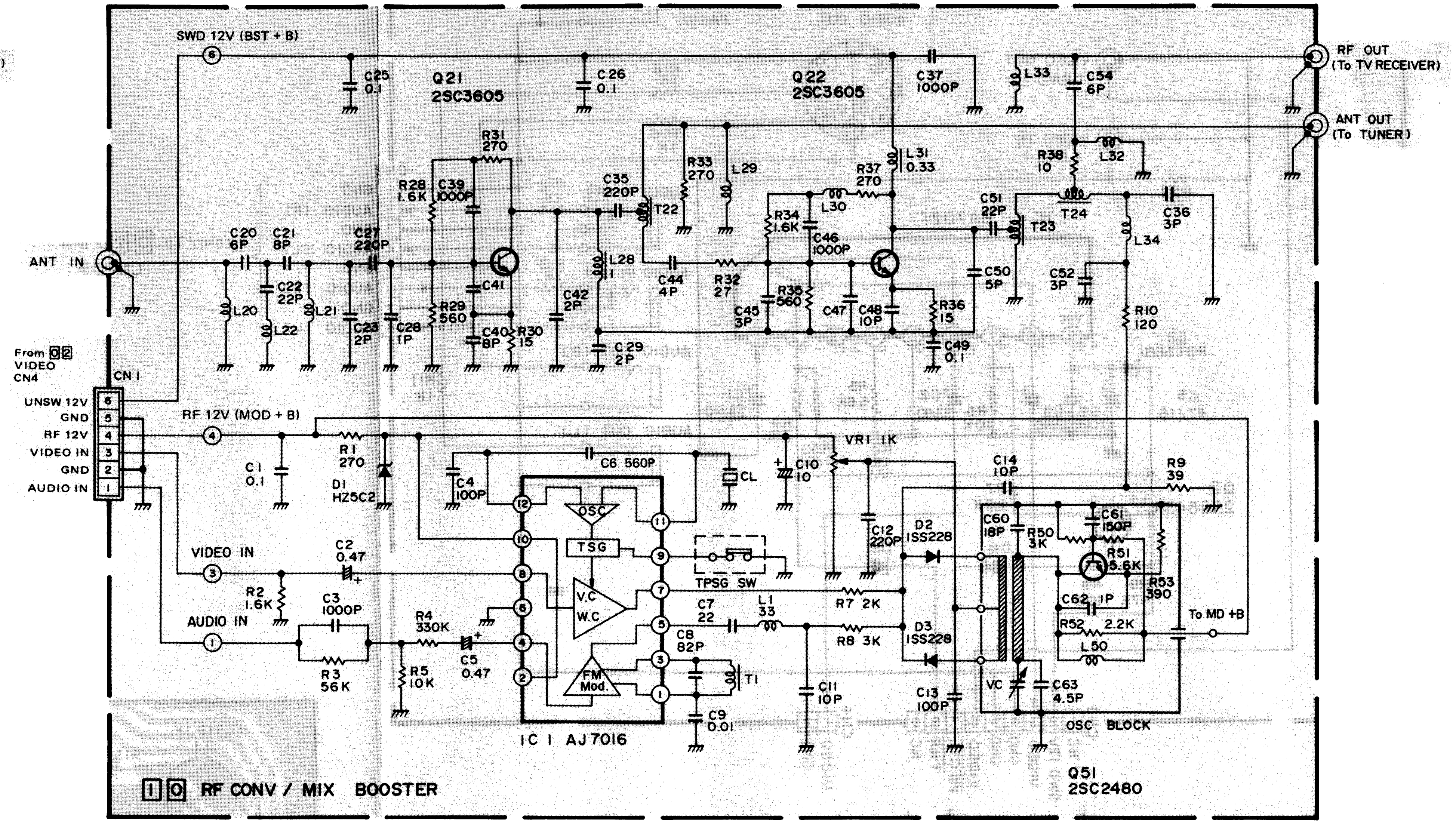
–HR-D565EK model–


SWD 12V (BST + B)
C25 0.1
Q21 2SC3605
R31 270
R28 1.6K
C39 1000P
ANT IN
C20 6P
C21 8P
C22 22P
C27 220P
C41
L20
L21
L22
C23 2P
C28 1P
R29 560
C40 8P
R30 15
From 0 2 VIDEO CN4
CN1
UNSW 12V
GND
RF 12V
VIDEO IN
GND
AUDIO IN
RF 12V (MOD + B)
C1 0.1
R1 270
D1 HZ5C2
C4 100P
VIDEO IN
C2 0.47
R2 1.6K
C3 1000P
AUDIO IN
R3 56K
R4 330K
R5 10K
C5 0.47
IC 1
1 0 RF CONV / MIX BOOSTER

NOTE: Shaded ( ) parts are critical for safety. Replace only with specified part numbers.

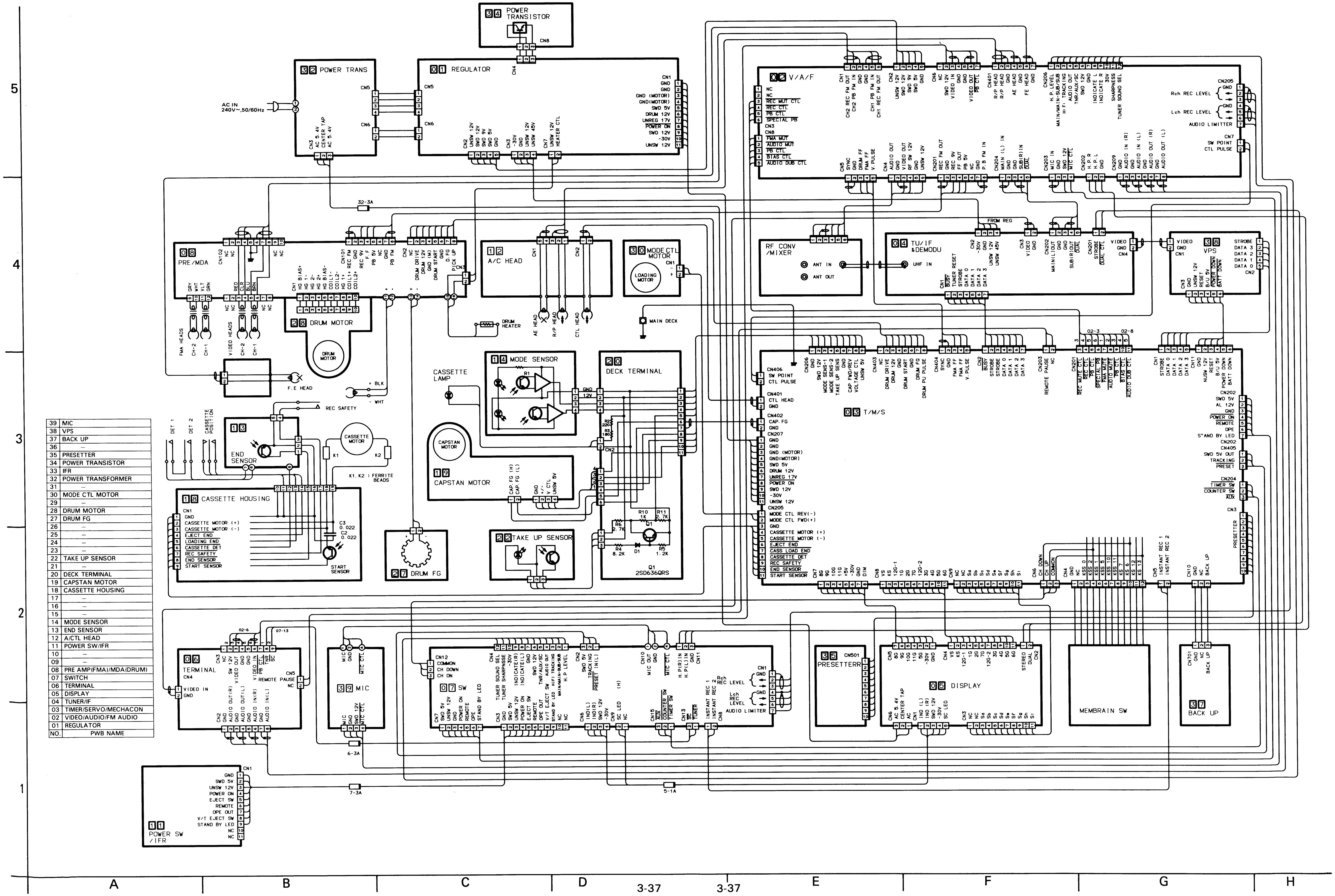

C110 68P
L111
L112
C112 68P
RF OUT (To TV RECEIVER)
ANT OUT (To TUNER)
C108 1000P
L108
R108 470
L109
L114
R106 100-390
R107 100-390
C109 5P-10P
L110
C111 7P
C136 7P
L113
C123 1000P
C124 2P-4P
L118
L117
R114 150-330
C125 3P-5P
C126 8P-2P
C138 0-2P
L119
R115 33-100
C127 0-4P
L120
R120 1.5K
R123 0-22
C132 1000P
C134 1000P
R116 180
Q103
R121 100
L121
R124 100-560
L123
L122
C143 5P
C128 0-2P
C129 2P-5P
C130 6P-12P
R117 470
R118 15
R122 0-10
C135 2P -7P
C131 1000P
C133 1000P
R119 18-39
CLIP & CLAMP
IC 1 LA7051
C5 3-33P
R4 0-6.8K
C13 3P-10P
R15 0-150
C14 2P-10P
D2
D3
R16 220
L1
VR1
T2
C12 0-100P
C11 0-0.1μ
R13 0-150
L2
C15 0-0.022μ
L4
R19 6.8K
C25 2P
Q1
R20 390
CT1
L3
C18 10P
R17 2.2K
R18 5.9K
C19 18P
C17 1P
C24 1000P
C20 1000P
C16 0-0.022μ

-HR-D565EK model-


SWD 12V (BST + B)
C25 0.1
Q21 2SC3605
C26 0.1
Q22 2SC3605
C37 1000P
L33
C54 6P
RF OUT (To TV RECEIVER)
ANT OUT (To TUNER)
R31 270
R28 1.6K
C39 1000P
C35 220P
R33 270
L29
R37 270
L31 0.33
R38 10
L32
T22
R34 1.6K
L30
C46 1000P
C51 22P
T24
C36 3P
T23
L34
ANT IN
C20 6P
C21 8P
C27 220P
L28
C44 4P
R32 27
C50 5P
C52 3P
C22 22P
L20
L22
L21
C41
R29 560
C42 2P
C45 3P
R35 560
C47
C48 10P
R36 15
R10 120
C23 2P
C28 1P
C40 8P
R30 15
C29 2P
C49 0.1
From 02 VIDEO CN4
CN 1
UNSW 12V
GND
RF 12V
VIDEO IN
GND
AUDIO IN
RF 12V (MOD + B)
R1 270
C1 0.1
D1 HZ5C2
C6 560P
C4 100P
CL
C10 10
VR1 1K
C14 10P
R9 39
OSC
TSG
V.C
W.C
FM Mod.
TPSG SW
C12 220P
D2 1SS228
C60 18P
R50 3K
C61 150P
R51 5.6K
VIDEO IN
C2 0.47
R2 1.6K
C3 1000P
AUDIO IN
R4 330K
C5 0.47
R3 56K
R5 10K
C7 22
L1 33
R7 2K
R8 3K
D3 1SS228
C62 1P
R52 2.2K
R53 390
To MD +B
L50
C8 82P
T1
C11 10P
C13 100P
VC
C63 4.5P
C9 0.01
IC 1 AJ7016
OSC BLOCK
Q51 2SC2480
10 RF CONV / MIX BOOSTER

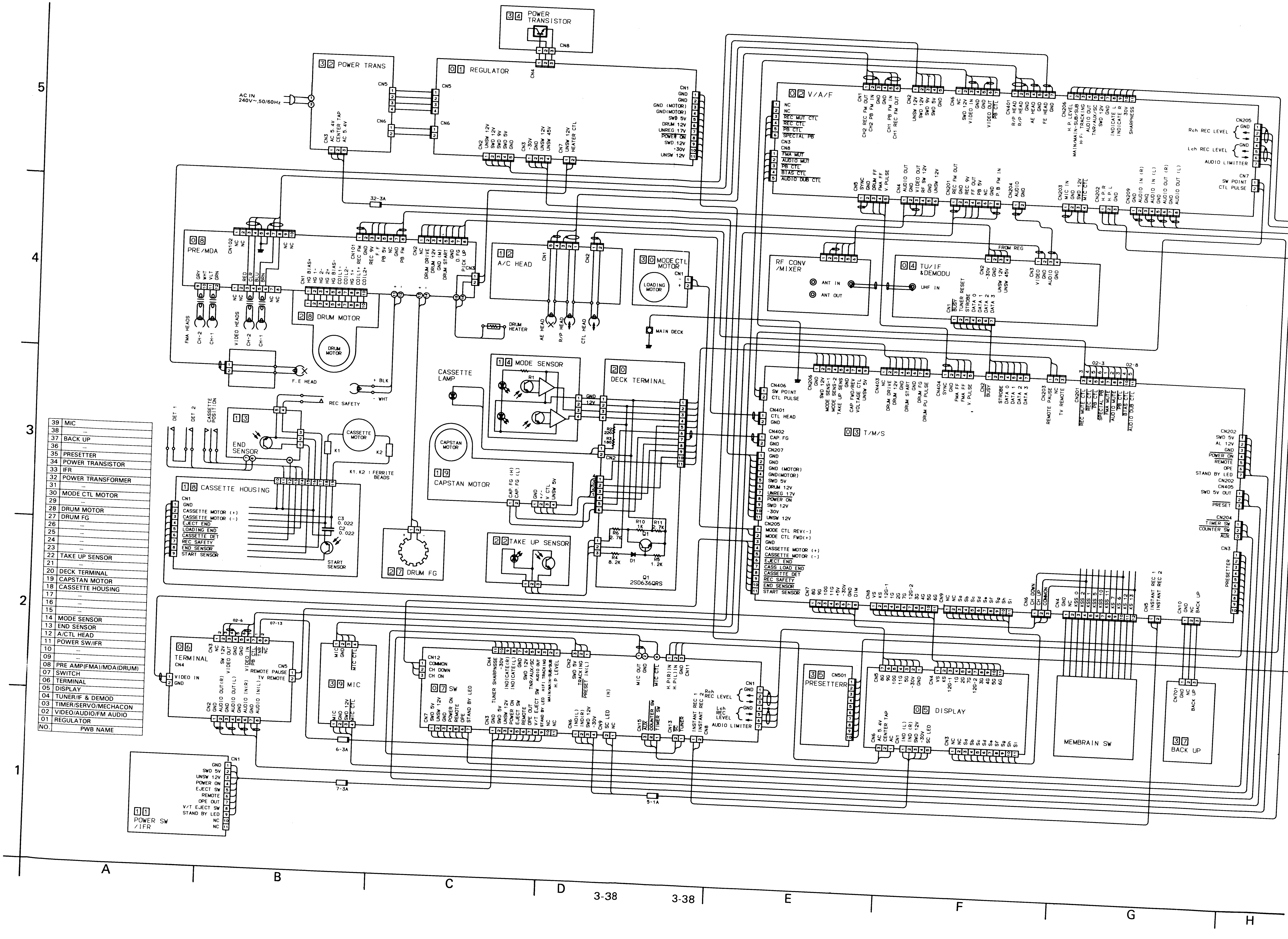
NOTE: Shaded ( ) parts are critical for safety. Replace only with specified part numbers.

3.39 OVERALL WIRING DIAGRAM (HR-D565E/EG)


34 POWER TRANSISTOR
32 POWER TRANS
AC IN 240V~,50/60Hz
01 REGULATOR
02 V/A/F
08 PRE/MDA
28 DRUM MOTOR
12 A/C HEAD
30 MODE CTL MOTOR
LOADING MOTOR
RF CONV /MIXER
ANT IN
ANT OUT
04 TU/IF &DEMODU
UHF IN
38 VPS
FROM REG
DRUM HEATER
MAIN DECK
F.E HEAD
REC SAFETY
CASSETTE LAMP
14 MODE SENSOR
20 DECK TERMINAL
03 T/M/S
13 END SENSOR
CASSETTE MOTOR
18 CASSETTE HOUSING
K1, K2 : FERRITE BEADS
START SENSOR
27 DRUM FG
19 CAPSTAN MOTOR
22 TAKE UP SENSOR
Q1 2SD636QRS
06 TERMINAL
39 MIC
07 SW
35 PRESETTERR
05 DISPLAY
MEMBRAIN SW
37 BACK UP
11 POWER SW /IFR
32-3A
6-3A
7-3A
5-1A
A
B
C
D
E
F
G
H
1
2
3
4
5

NO.	PWB NAME
39	MIC
38	VPS
37	BACK UP
36	–
35	PRESETTER
34	POWER TRANSISTOR
33	IFR
32	POWER TRANSFORMER
31	–
30	MODE CTL MOTOR
29	–
28	DRUM MOTOR
27	DRUM FG
26	–
25	–
24	–
23	–
22	TAKE UP SENSOR
21	–
20	DECK TERMINAL
19	CAPSTAN MOTOR
18	CASSETTE HOUSING
17	–
16	–
15	–
14	MODE SENSOR
13	END SENSOR
12	A/CTL HEAD
11	POWER SW/IFR
10	–
09	–
08	PRE AMP(FMA)/MDA(DRUM)
07	SWITCH
06	TERMINAL
05	DISPLAY
04	TUNER/IF
03	TIMER/SERVO/MECHACON
02	VIDEO/AUDIO/FM AUDIO
01	REGULATOR

3.40 OVERALL WIRING DIAGRAM (HR-D565EK)


34 POWER TRANSISTOR
CN8
32 POWER TRANS
AC IN 240V~,50/60Hz
CN5
CN6
CN3 AC 5.4V CENTER TAP AC 5.4V
01 REGULATOR
CN1 GND GND GND (MOTOR) GND(MOTOR) SWD 5V DRUM 12V UNREG 17V POWER ON SWD 12V -30V UNSW 12V
CN2 UNSW 12V SWD 12V SWD 9V SWD 5V GND
CN3 -30V GND UNSW 12V UNSW 45V
CN7 UNSW 12V HEATER CTL
32-3A
02 V/A/F
CN2 NC NC REC MUT CTL REC CTL PB CTL SPECIAL PB
CN3
CN8 FMA MUT AUDIO MUT PB CTL BIAS CTL AUDIO DUB CTL
CN205 Rch REC LEVEL GND Lch REC LEVEL GND AUDIO LIMITTER
CN7 SW POINT CTL PULSE
08 PRE/MDA
CN102
FMA HEADS CH-2 CH-1
VIDEO HEADS CH-2 CH-1
F.E HEAD
28 DRUM MOTOR
CN1 HG BIAS+ HG 1- HG 2- HG 2+ HG BIAS- COIL1- COIL2- COIL1+ COIL2+
DRUM MOTOR
12 A/C HEAD
AE HEAD R/P HEAD CTL HEAD
DRUM HEATER
30 MODE CTL MOTOR
LOADING MOTOR
MAIN DECK
RF CONV /MIXER
ANT IN ANT OUT
04 TU/IF &DEMODU
UHF IN
FROM REG
CN1 BUSY TUNER RESET STROBE DATA 0 DATA 1 DATA 2 DATA 3
CASSETTE LAMP
14 MODE SENSOR
20 DECK TERMINAL
R1 R2 220 R3 180
CN2
13
END SENSOR
CASSETTE MOTOR
K1 K2
K1, K2 : FERRITE BEADS
REC SAFETY
+ BLK - WHT
DET 1 DET 2 CASSETTE POSITION
CAPSTAN MOTOR
19 CAPSTAN MOTOR
CAP FG (H) CAP FG (L) GND V+ V CTL UNSW 5V
18 CASSETTE HOUSING
CN1 GND CASSETTE MOTOR (+) CASSETTE MOTOR (-) EJECT END LOADING END CASSETTE DET REC SAFETY END SENSOR START SENSOR
C3 C2 0.022 0.022
START SENSOR
27 DRUM FG
22 TAKE UP SENSOR
R10 1K R11 2.7K R6 2.7K R4 8.2K D1 Q1 1.2K
Q1 2SD636QRS
03 T/M/S
CN406 SW POINT CTL PULSE
CN401 CTL HEAD GND
CN402 CAP. FG GND
CN207 GND GND GND (MOTOR) GND(MOTOR) SWD 5V DRUM 12V UNREG 17V POWER ON SWD 12V -30V UNSW 12V
CN205 MODE CTL REV(-) MODE CTL FWD(+) GND CASSETTE MOTOR (+) CASSETTE MOTOR (-) EJECT END CASS LOAD END CASSETTE DET REC SAFETY END SENSOR START SENSOR
CN202 SWD 5V AL 12V GND POWER ON REMOTE OPE STAND BY LED
CN405 SWD 5V OUT PRESET
CN204 TIMER SW COUNTER SW AUX
CN3 PRESETTER
02-3 02-8
06 TERMINAL
CN4 VIDEO IN GND
02-6 07-13
CN5 REMOTE PAUSE TV REMOTE
39 MIC
6-3A
07 SW
CN12 COMMON CH DOWN CH ON
MIC OUT GND MIC CTL
Rch REC LEVEL Lch REC LEVEL AUDIO LIMITER
35 PRESETTERR CN501
05 DISPLAY
MEMBRAIN SW
37 BACK UP
CN701 GND NC BACK UP
CN10 GND NC BACK UP
11 POWER SW /IFR
CN1 GND SWD 5V UNSW 12V POWER ON EJECT SW REMOTE OPE OUT V/T EJECT SW STAND BY LED NC NC
7-3A
5-1A
A B C D E F G H
1 2 3 4 5

NO.	PWB NAME
39	MIC
38	–
37	BACK UP
36	–
35	PRESETTER
34	POWER TRANSISTOR
33	IFR
32	POWER TRANSFORMER
31	–
30	MODE CTL MOTOR
29	–
28	DRUM MOTOR
27	DRUM FG
26	–
25	–
24	–
23	–
22	TAKE UP SENSOR
21	–
20	DECK TERMINAL
19	CAPSTAN MOTOR
18	CASSETTE HOUSING
17	–
16	–
15	–
14	MODE SENSOR
13	END SENSOR
12	A/CTL HEAD
11	POWER SW/IFR
10	–
09	–
08	PRE AMP(FMA)/MDA(DRUM)
07	SWITCH
06	TERMINAL
05	DISPLAY
04	TUNER/IF & DEMOD
03	TIMER/SERVO/MECHACON
02	VIDEO/AUDIO/FM AUDIO
01	REGULATOR

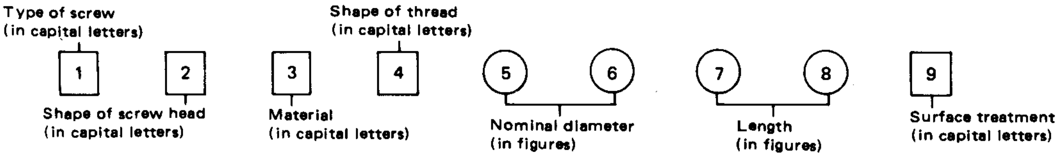
SECTION 4
EXPLODED VIEWS AND PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

4.1 STANDARD PART NUMBER CODING (Screw coding)

Standard screw part numbers are as follows.

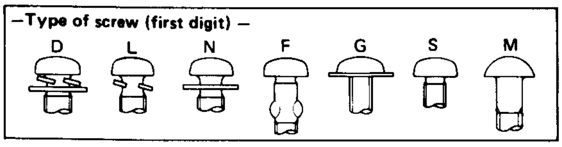

Type of screw
(in capital letters)
Shape of thread
(in capital letters)
1
2
3
4
5
6
7
8
9
Shape of screw head
(in capital letters)
Material
(in capital letters)
Nominal diameter
(in figures)
Length
(in figures)
Surface treatment
(in capital letters)

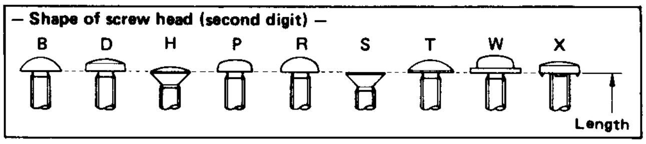
Type of screw (first digit)

S	Normal screws
D	Assembled screws (with plain and spring washers)
L	" (with spring washer)
N	" (with plain washer)
F	Feather screws
G	Washer head tapping screws
M	Wood screws

Shape of screw head (second digit)

B	Brazier head
D	Binding head
H	Oval countersunk head
P	Pan head
R	Round head
S	Flat head
T	Truss head
W	Washer head (machine screws)
X	Toothed head


—Type of screw (first digit) —
D
L
N
F
G
S
M

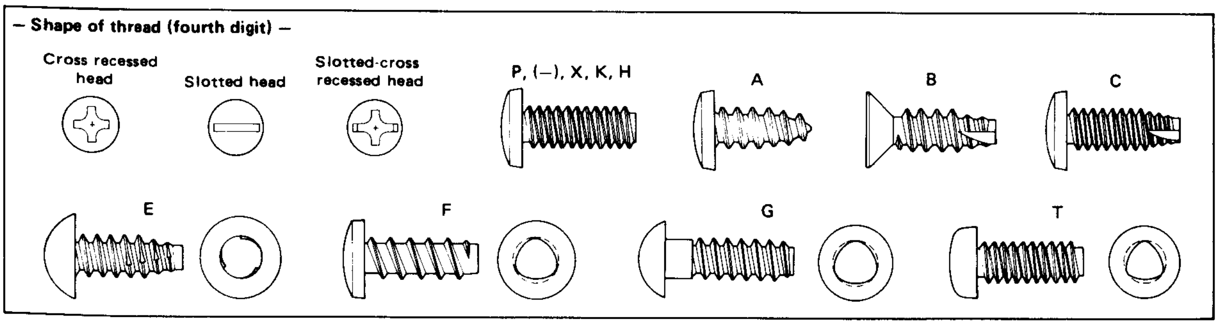

— Shape of screw head (second digit) —
B
D
H
P
R
S
T
W
X
Length

Material (third digit)

S	Steel
E	Stainless steel
C	Cast iron
U	Copper
B	Brass
P	Phosphor bronze
N	Nickel silver
Y	Cast brass
A	Aluminum
Z	Zinc alloy
K	Polycarbonate

Shape of thread (fourth digit)

P	Cross recessed head screws
(—)	Slotted head machine screws
X	Slotted-cross recessed head machine screws
K	Cross recessed head machine screws for precision equipment (type 1)
H	" (type 3)
A	Cross recessed head tapping screws (type 1)
B	" (type 2)
C	" (type 3)
E	Cross recessed head special tapping screws (brand : evertight)
F	" (brand : P-tight)
T	" (brand : taptight)
G	"


— Shape of thread (fourth digit) —
Cross recessed head
Slotted head
Slotted-cross recessed head
P, (—), X, K, H
A
B
C
E
F
G
T

Nominal diameter (fifth and sixth digits)

The fifth and sixth digits are numbers indicating a nominal diameter or dimension. If the dimension exceeds 10 mm, three digits are used. The number indicates a nominal diameter or dimension, given in millimeters, multiplied by ten.

Length (seventh and eighth digits)

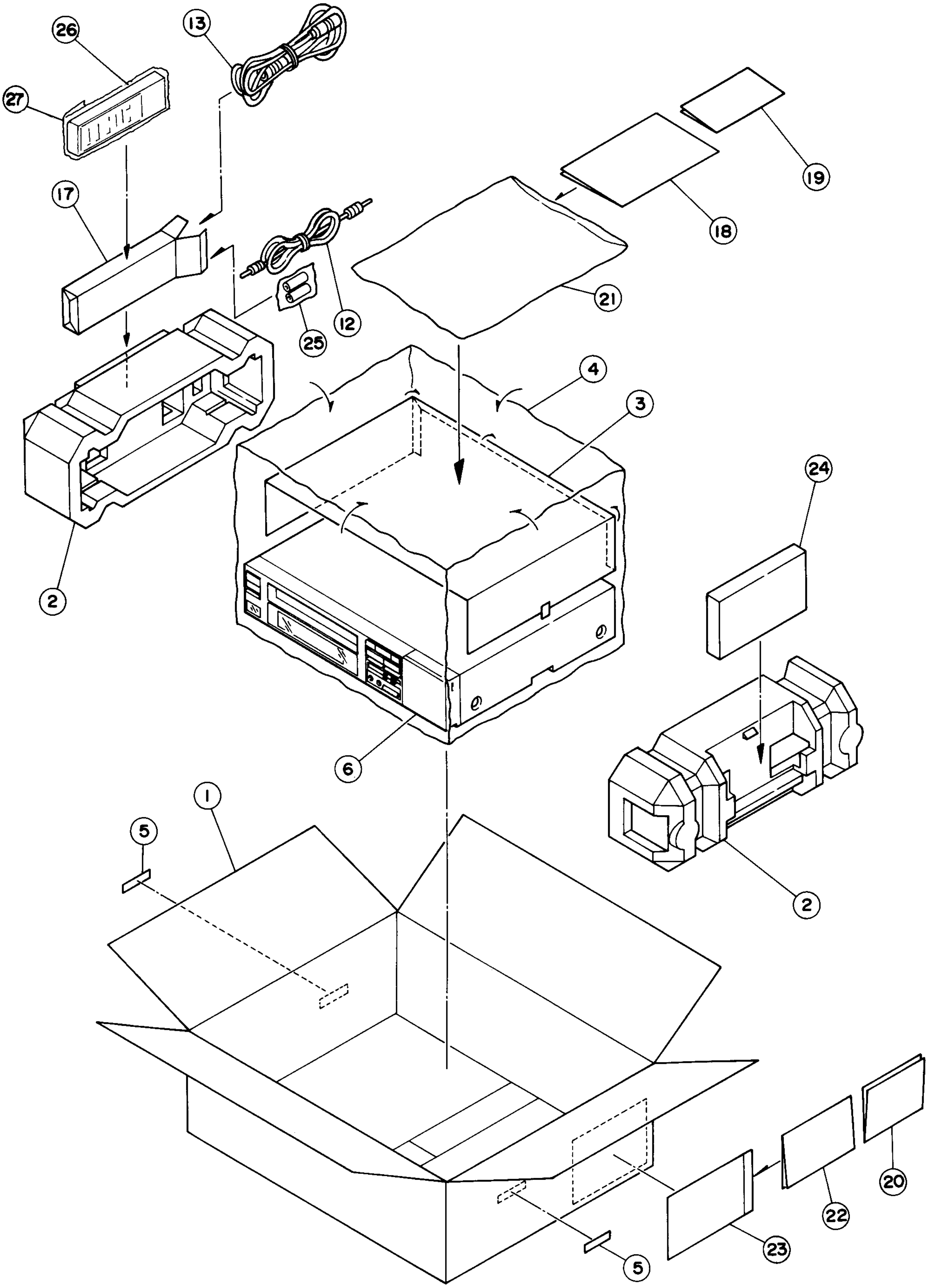
The seventh and eighth digits are numbers indicating length in milimeters. The preceding figure is zero when the dimension is smaller than 10 mm. For machine screws used in precision equipment whose length is given in units of 0.1 mm, the number indicates ten times the size of their length.

Surface treatment (ninth digit)

Z	Dichromate treatment after galvanizing (MFZn II-C)
N	Nickel plating (MFNi II, MFNi I)
R	Chromium plating (MBCr II, MBCr I)
G	Silver plating (SP4)
B	Black coating after plating
F	Blackening of iron (FB)
M	Blackening after galvanizing
K	Pickling of brass (PF2)
P	Phosphate treatment
W	Uni-chrome plating
L	Coating with transparent paint
A	Coloring red after galvanizing (MFZn II-C)
C	Coloring blue after galvanizing (MFZn II-C)
T	Coloring green after galvanizing (MFZn II-C)
V	Coloring purple after galvanizing (MFZn II-C)

4.2 EXPLODED VIEWS AND PARTS LIST

4.2.1 Packing and accessories [M1]


26
13
27
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17
18
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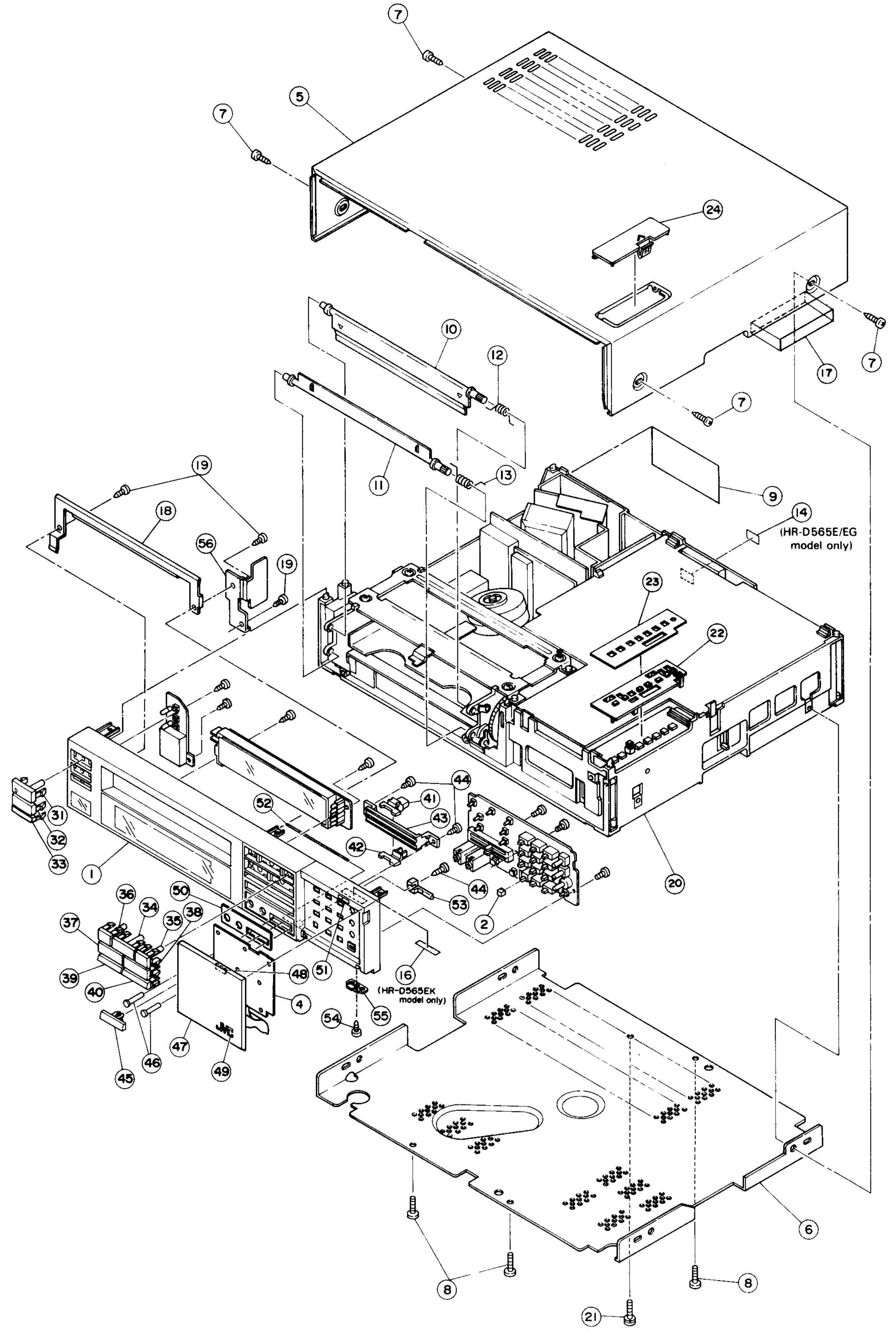
21
4
3
2
24
6
1
5
2
20
22
5
23

Packing and accessories [M1]

Ref. No.	Part No.	Part Name	Description	Q'ty
1	PQ30786-16	Packing Case	HR-D565E	1
	PQ30786-13	Packing Case	HR-D565EG	1
	PQ30786-12	Packing Case	HR-D565EK	1
2	PQ30787B	Cushion Assembly	Righ & Left	1
3	PQ41026-3	Protect Sheet		1
4	PUM30021-33	Poly Bag	HR-D565E/EG	1
	PUM30020-17	Poly Bag	HR-D565EK	1
5	PUP40329	Serial No. Sticker		2
6	–	Cabinet Assembly	Refer to [M2]	1
11	–	–		–
12	PU56142	Pin Cord Assembly		1
13	PU55906	Cable Assembly		1
14	–	–		–
15	–	–		–
16	–	–		–
17	PQ41801-2	Case	Cable Assembly	1
⚠ 18	PU30425-792	Instruction Book	HR-D565E	1
⚠	PU30425-784	Instruction Book	HR-D565EG	1
⚠	PU30425-783	Instruction Book	HR-D566EK	1
19	PU35247	FTZ Information Sheet	HR-D565E/EG	1
20	BT-20060	Warranty Card	HR-D565EK	1
21	QPGA025-03505	Poly Bag		1
22	BT-20069A	Warranty Card	HR-D565E/EG	1
	BT-20066	Warranty Card	HR-D565EK	1
23	PQM30023-5	Poly Bag	HR-D565EK	1
24	PTE-30-101	Cassette Tape		1
25	UM-3DJ2P	Battery	2 cells	1
⚠ 26	PQ10244N	Remote Control Unit	HR-D565E, Refer to [M6]	1
⚠	PQ10244K	Remote Control Unit	HR-D566EG, Refer to [M6]	1
⚠	PQ10244J	Remote Control Unit	HR-D565EK, Refer to [M6]	1
27	PQ10181-001	Poly Bag		1

NOTES: [M] indicates mechanical symbol number.
[2 digits] indicates circuit board symbol number.

4.2.2 Cabinet assembly [M2]


7
5
7
24
10
12
17
7
7
11
13
19
18
9
14
(HR-D565E/EG model only)
56
19
23
22
44
41
52
43
31
32
42
33
1
44
53
2
20
36
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34
38
35
37
51
48
16
(HR-D565EK model only)
39
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47
45
49
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8
8
21

Cabinet assembly [M2]

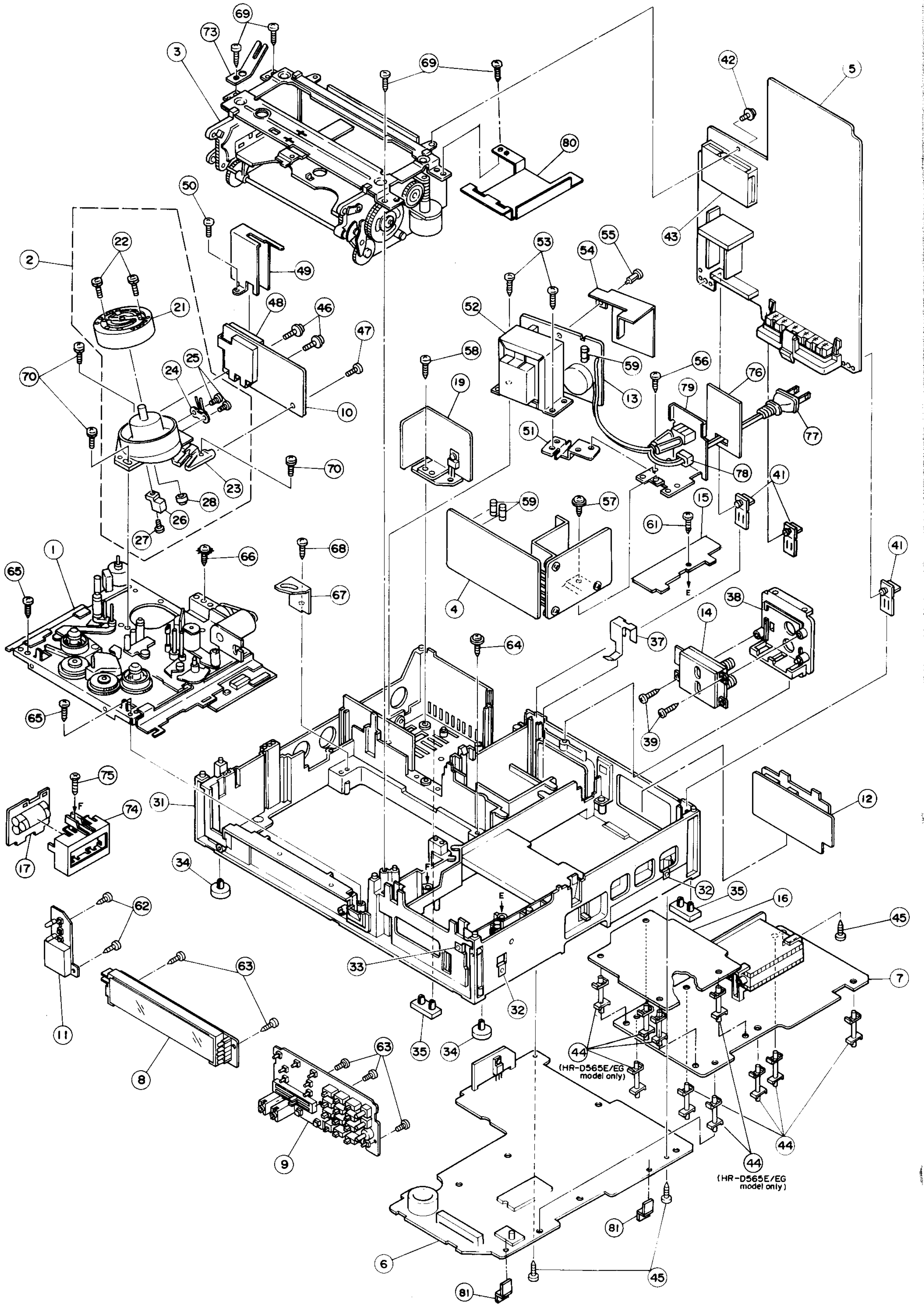
Ref. No.	Part No.	Part Name	Description	Q'ty
⚠ 1	PQ10253G-5	Front Panel Assembly	HR-D565E, Incl. 31–56, (Front panel components)	1
⚠	PQ10253E-5	Front Panel Assembly	HR-D566EG, Incl. 31–53, (Front panel components)	1
⚠	PQ10253D-5	Front Panel Assembly	HR-D565EK, Incl. 31–56, (Front panel components)	1
2	PQ41729	Timer Button		1
3	—	— .		—
4	PQ30920F	Membrain Assembly	HR-D565E	1
	PQ30920E	Membrain Assembly	HR-D565EG	1
	PQ30920D	Membrain Assembly	HD-D565EK	1
⚠ 5	PQ10267	Top Cover		1
⚠ 6	PQ10221-1-3	Bottom Cover		1
7	SDSA4014M	Tapping Screw	Top Cover	4
8	SDSF3012R	Tapping Screw	Bottom Cover	3
⚠ 9	PQ35754-6-2	Rating Label	HR-D565E	1
⚠	PQ35754-5-2	Rating Label	HR-D565EG	1
⚠	PQ35754-4-2	Rating Label	HR-D565EK	1
10	PQ30107BS-19	Upper Door Assembly		1
11	PQ30030-8-15	Lower Door		1
12	PQ40104-2	Spring	Upper Door	1
13	PQ40472	Spring	Lower Door	1
14	PQ42257	Label	HR-D565E/EG (Rear)	1
15	—	—		—
16	PQ41700	Label	HR-D565EK (Front)	1
17	PU58020-4	Caution Label	HR-D565EK	2
18	PQ30939	Wire Holder		1
19	SDSF2608Z	Tapping Screw		3
20	—	Chassis Assembly	Refer to [M3]	1
21	SDSP3018R	Screw	GND	1
22	PQ30944-1-4	Preset Base		1
23	PQ30941-7	Preset Plate		1
24	PQ30940	Preset Door		1

—Front panel conponents—

Ref. No.	Part No.	Part Name	Description	Q'ty
31	PQ30971	Power Button Assembly	HR-D565EG	1
	PQ30971-2	Power Button Assembly	HR-D565E/EK	1
32	PQ30813	Eject Button	HR-D565E	1
	PQ30813-2	Eject Button	HR-D565EG	1
	PQ30813-1-2	Eject Button	HR-D565EK	1
33	PQ30972	Dummy Button	HR-D565E	1
34	PQ30788-2	Play Button	HR-D565EG	1
	PQ30788-1-1	Play Button	HR-D565E/EK	1
35	PQ30796-2	F.F. Button	HR-D565EG	1
	PQ30796	F.F. Button	HR-D565E/EK	1
36	PQ30807-2	Rew Button	HR-D565EG	1
	PQ30807	Rew Button	HR-D565E/EK	1
37	PQ30814-1-1	Stop Button		1
38	PQ30815-2	Pause Button	HR-D565EG	1
	PQ30815-1-1	Pause Button	HR-D565E/EK	1
39	PQ30795	Button (A)	HR-D565E, REC	1
	PQ30795-3	Button (B)	HR-D565EG, REC	1
40	PQ30795-2	Button (B)	HR-D565E, AUDIO DUB	1
	PQ30795-4	Button (B)	HR-D565EG, AUDIO DUB	1
	PQ30795	Button (B)	HR-D565EK, AUDIO DUB	1
41	PQ30816	Slide Volume (L)		1
42	PQ30817	Slide Volume (R)		1
43	PQ30821	Slide Plate		1
44	SDSF2606Z	Tapping Screw		3
45	PQ30794-2	CH. Button	HR-D565E/EG	1
	PQ30794	CH. Button	HR-D565EK	1
46	PQ41587-1-1	Pin		1
47	PQ20184-7	Door	HR-D565E	1
	PQ20184-5	Door	HR-D565EG	1
	PQ20184-4	Door	HR-D565EK	1
48	PQ41616	Magnet Plate		1
49	PQ30224B	Mark		1
50	PQ41739-2	Plate (S)	HR-D565EG	1
	PQ41739-3	Plate (S)	HR-D565E/EK	1
51	PQ41617	Magnet Assembly		1
52	PQ41740-1-1	Shaft		1
53	PQ41865	Stopper		1
54	SDSF2008R	Screw		1
55	PU58512	Door Spring		1
56	PQ20196	Hinge		1

NOTES: [M] indicates mechanical symbol number.

4.2.3 Chassis assembly [M3]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67
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14
64
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74
31
F
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17
34
32
35
16
45
62
E
33
7
63
32
11
8
35
34
63
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(HR-D565E/EG model only)
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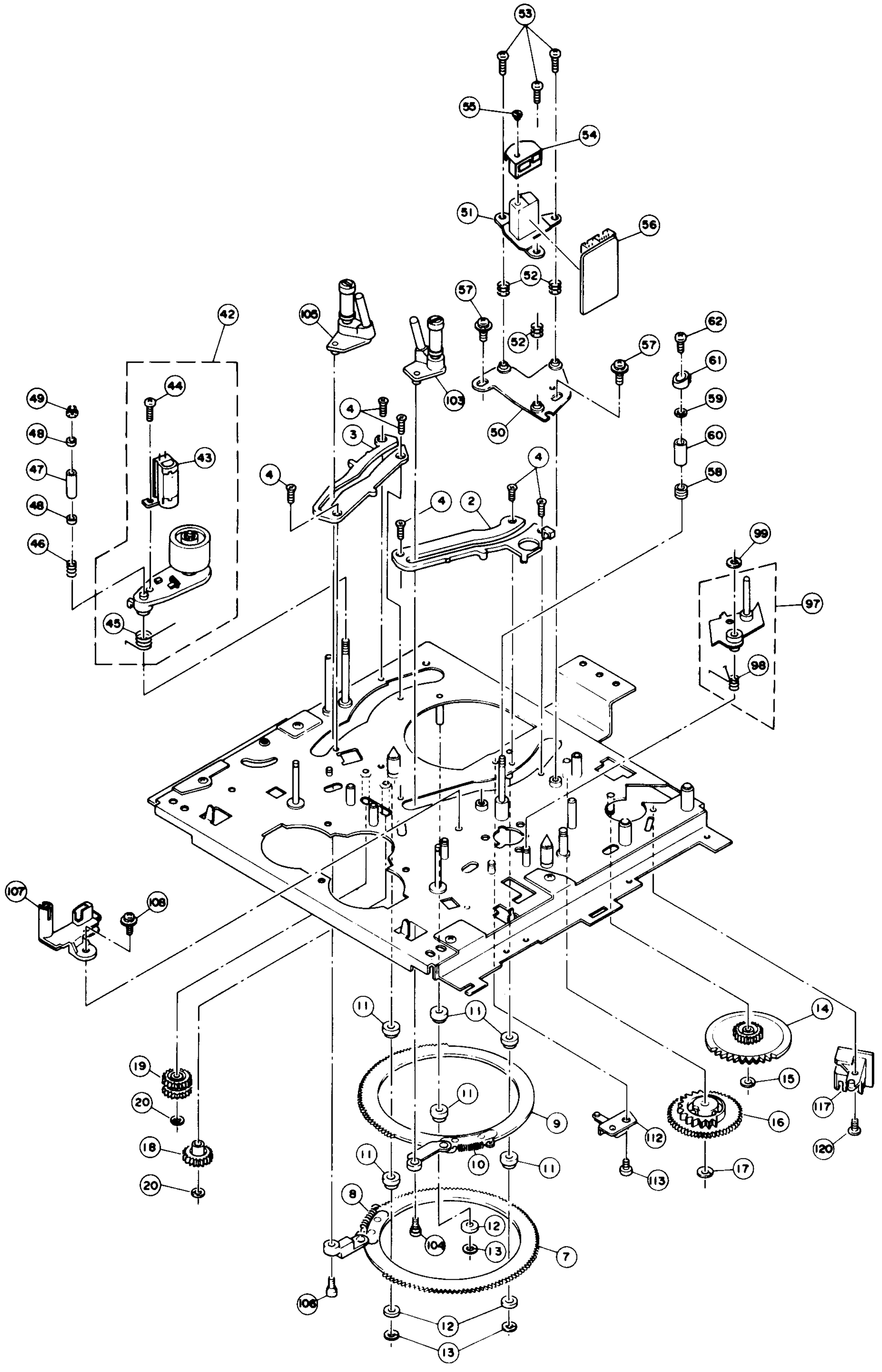
(HR-D565E/EG model only)
81
6
45
81

Chassis assembly [M3]

Ref. No.	Part No.	Part Name	Description	Q'ty
1	—	Mechanism Assembly	Refer to [M4]	1
2	—	Drum Assembly	Refer to 21—28	1
3	—	Cassette Housing Assembly	Refer to [M5]	1
4	—	Regulator Board Assembly	Refer to [01]	1
5	—	V/A/F Board Assembly	Refer to [02]	1
6	—	T/S/M Board Assembly	Refer to [03]	1
7	—	Tuner/IF Board Assembly	Refer to [04], HR-D565EK	1
	—	Tuner/IF & Demodulator Board Ass'y	Refer to [04], HR-D565E/EG	1
8	—	Display Board Assembly	Refer to [05]	1
9	—	Switch Board Assembly	Refer to [07]	1
10	—	Preamp/MDA Board Assembly	Refer to [08]	1
11	—	Power Switch & IFR Board Assembly	Refer to [11]	1
12	—	Terminal Board Assembly	Refer to [06]	1
13	—	Power Transformer Board Assembly	Refer to [32]	1
14	—	RF Switch & Convertor	Refer to [04]	1
15	—	Presetter Board Assembly	Refer to [35]	1
16	—	VPS Board Assembly	Refer to [38], HR-D565E/EG	1
17	—	Back Up Board Assembly	Refer to [37]	1
18	—	—		—
19	—	Power Transistor Board Assembly	Refer to [34]	1
21	PQ20114A	Upper Drum Assembly		1
22	NDBP2608N	Screw	Upper Drum	2
⚠ 23	PQ20024Q-22	Drum Motor Assembly	Incl. 24—28	1
24	PU56202-7	Heater		2
25	SDBP2603N	Screw	Heater	1
26	PU57619	Pick-up Head		1
27	SPSH1735Z	Mini Screw	Pick-up Head	1
28	PU49483-3	Commutator		1
31	—	Chassis		1
32	PU58089	Plate Nut	Chassis	2
33	PU58088	Plate Nut	Chassis	1
34	PQ41629	Foot	Chassis	2
35	PQ41629-2	Foot	Chassis	2
36	—	—		—
37	PQ42285	Earth Spring	GND	1
38	PQ30943-3-5	Terminal Board	HR-D565E	1
	PQ30943-1-5	Terminal Board	HR-D565EG	1
	PQ30943-2-5	Terminal Board	HR-D565EK	1
39	SDSA2608Z	Tapping Screw	RF Convertor	2
40	—	—		—
41	PU58018-1-2	PWB Hinge	V/A/F Board	3
42	DPSP3008Z	Screw	V/A/F Board	1
43	PU57795	Preamp Sheild	V/A/F Board	1
44	PU58077	PC Support	T/S/M, TU/IF & DEMOD, VPS, HR-D565E/EG	10
	PU58077	PC Support	T/S/M, TU/IF, HR-D565EK	4
45	SDSF3010Z	Tapping Screw	T/S/M, TU/IF & DEMOD, HR-D565E/EG	3
	SDSF3010Z	Tapping Screw	T/S/M, TU/IF, HR-D565E/EG	3
46	DPSP2606Z	Screw	Preamp/MDA Board	2
47	DPSP2606Z	Screw	Preamp/MDA Board	1
48	PQ20233	Shield Cover		1
49	PQ41724-1-3	Shield Cover		1
50	SDST3006Z	Tapping Screw	Shield Cover	1
51	PQ41725	Earth Bracket	GND	1
⚠ 52	PU58430	Power Transformer	HR-D565E/EG	1
⚠	PU58431	Power Transformer	HR-D565EK	1
⚠ 53	SDSA4012Z	Tapping Screw	Power Transformer	2
⚠ 54	PU35904-1-1	AC Cover		1
⚠ 55	E48729-001	Plastic Rivet	AC Cover	1
56	SDSA3012R	Tapping Screw	Bracket	1
57	DPSP3008Z	Screw	Regulator Board	1
58	SDSA4016Z	Tapping Screw	Power Transistor Board	1
59	—	Fuse	Refer to [01], [32]	3
60	—	—		—
61	SDSA3012Z	Tapping Screw	Preset Board	1
62	SDSA2608Z	Tapping Screw	Power SW & IFR Board	2
63	SDSF2608Z	Tapping Screw	Display, Switch Board	5
64	PQ40413	Special Screw	Mechanism	1
65	SDSA4012Z	Tapping Screw	Mechanism	2
66	PQ41396	Special Screw	Mechanism	1
67	PQ40804-1-1	Bracket		1
68	SDSA4012Z	Tapping Screw	Bracket	1
69	SDSF3012Z	Tapping Screw	Cassette Housing	4
70	LPSP3008Z	Screw	Drum	3
71	—	—		—
72	—	—		—
73	PQ41556	Earth Plate	Cassette Housing	1
74	PQ30977	Battery Holder		1
75	SDSF3010Z	Tapping Screw	Battery Holder	1
76	PQ30976	Bracket Sheet		1
77	QMP3980-200	Power Cord		1
78	QHS3771-108	Strain Relief		1
79	PQ30942	Bracket		1
80	PQ31142	Shield Plate		1
81	PU57663-1-1	Board Hinge	T/S/M Board	2

NOTES: [M] indicates mechanical symbol number.
[2 digits] indicates circuit board symbol number.

4.2.4 Mechanism assembly [M4]



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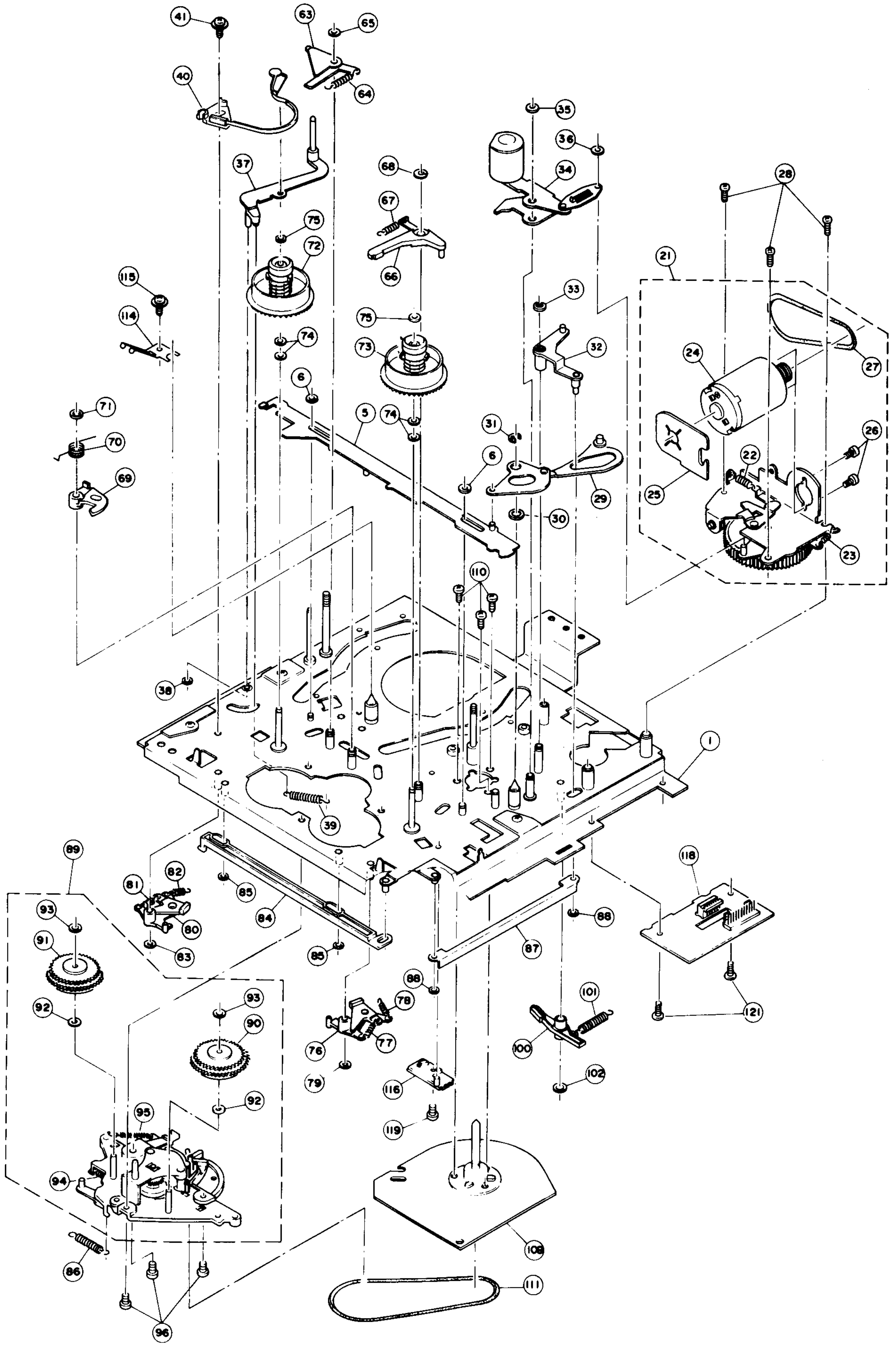

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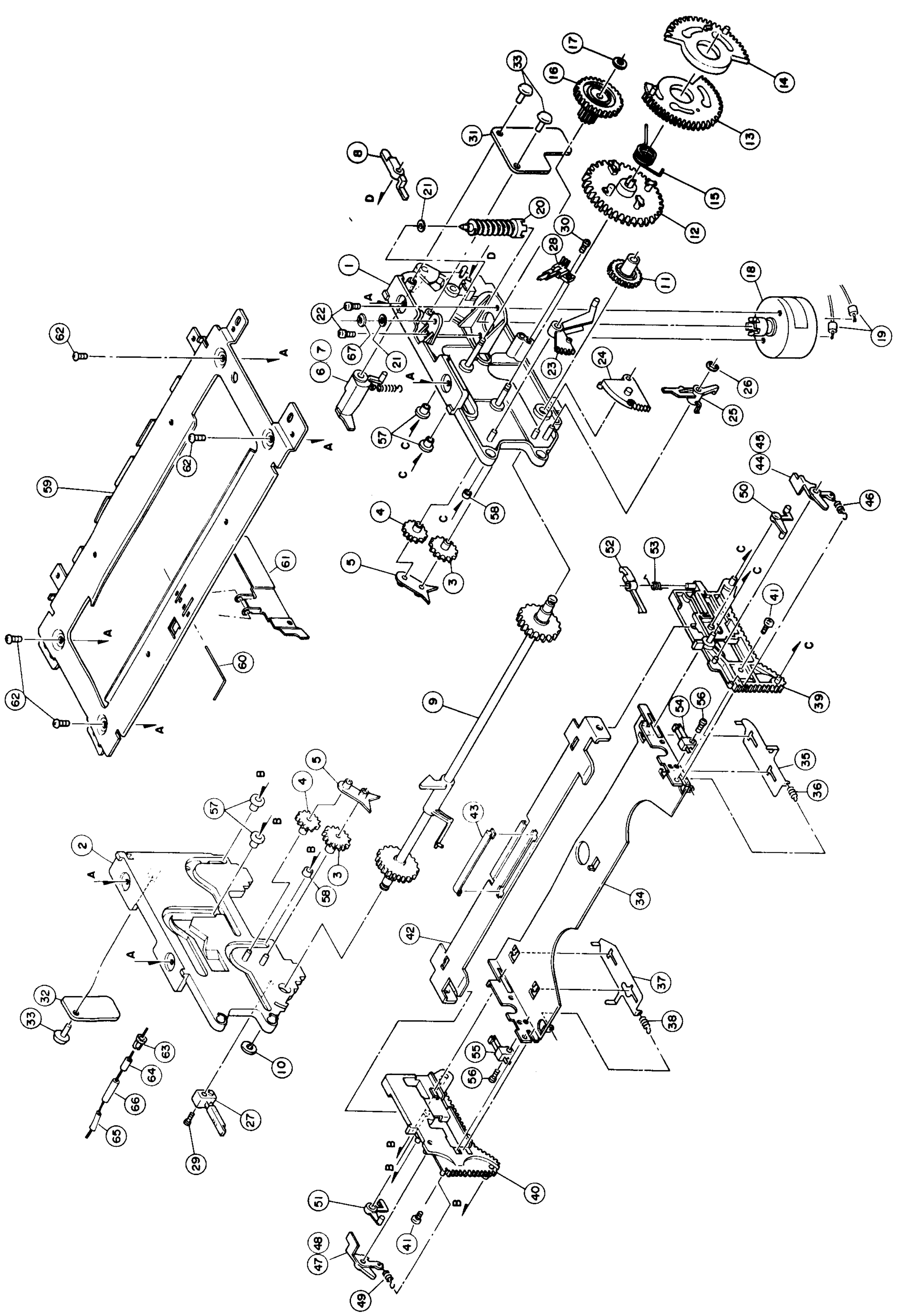
Mechanism assembly [M4]

Ref. No.	Part No.	Part Name	Description	Q'ty
1	—	Main-deck Assembly		1
2	PQ30486	Loading Guide	Take-up	1
3	PQ30487	Loading Guide	Supply	1
4	PQ41269	Special Screw	Loading Guides	6
5	PQ30130B-3	Slide Plate Assembly		1
6	PQM30017-8	Slit Washer	Slide Plate	2
7	PQ40223B	Loading Ring Assembly	Supply, Incl. 8	1
8	PQM30001-151	Spring		1
9	PQ40227B	Loading Ring Assembly	Take-up, Incl. 10	1
10	PQM30001-151	Spring		1
11	PQ40213	Collar		6
12	PQM30005-29	Collar		3
13	PQM30017-4	Slit Washer	Loading Rings	3
14	PQ30489	Loading Gear (1)		1
15	PQM30017-12	Slit Washer	Loading Gear (1)	1
16	PQ41354A	Loading Gear (2) Assembly		1
17	PQM30017-12	Slit Washer	Loading Gear (2)	1
18	PQ40219	Connect Gear (1)		1
19	PQ40220	Connect Gear (2)		1
20	PQM30017-8	Slit Washer	Connect Gears	2
21	PUS36689M	Drive Gear Bracket Assembly	Incl. 22–27	1
22	PQM30001-129	Spring		1
23	PQM30001-130	Spring		1
⚠ 24	PQ40244A-2	Motor Assembly	mode control motor	1
25	—	Mode Motor Board Assembly	Refer to [30]	1
26	SPSP3003Z	Screw	Motor	2
27	PQM30003-14	Belt	mode control belt	1
28	SDSP2608Z	Screw	Drive Gear Bracket	3
29	PQ40246A	Lever Assembly		1
30	PQM30005-41	Collar		1
31	REE4000	E-Ring	Lever	1
32	PQ41847A	Cam Arm Assembly		1
33	PQM30017-12	Slit Washer	Cam Arm	1
34	PQ40252B-4	Pinch Roller Arm Assembly		1
35	PQM30017-12	Slit Washer	Pinch Roller Arm	1
36	PQM30017-8	Slit Washer	Pinch Roller Arm	1
37	PQ41364A	Tension Arm Assembly		1
38	PQM30017	Slit Washer	Tension Arm	1
39	PQM30001-186	Spring	back tension	1
40	PQ41370B	Tension Band Assembly		1
41	DPSP3006Z	Screw	Tension Band	1
42	PQ41374E	Erase Head Arm Assembly	Incl. 43–45	1
43	PU57641	Full Erase Head		1
44	SPSG2608Z	Tapping Screw	Full Erase head	1
45	PQ40427	Spring		1
46	PQM30002-112	Spring		1
47	PU53629-2	Tape Guide	Supply Guide Pole	1
48	PQ40752	Guide Flange		2
49	PQ40353	Nylon Nut		1
50	PQ41376A-1	Head Base Assembly	Audio/Control Head	1
51	PU57642	Audio/Control Head		1
52	PU30080-49	Spring		3
53	SPSP2608Z	Screw	Audio/Control Head	3
54	PU54557-1-4	Shield Cap		1
55	HPSP1716N	Screw	Shield Cap	1
56	—	A/CTL Head Board Assembly	Refer to [12]	1
57	DPSP2608Z	Screw	Head Base	2
58	PQ41348-2	Guide Flange		1
59	PQ40268-2	Guide Flange		1
60	PU53629-2	Tape Guide	Take-up Guide Pole	1
61	PQ41346	Guide Pole Cap		1
62	SDSP2006Z	Screw		1
63	PQ40274A-2	Loading Brake Assembly	Supply, Incl. 64	1
64	PQM30001-175	Spring		1
65	PQM30017-12	Slit Washer	Loading Brake	1
66	PQ40276A-2	Loading Brake Assembly	Take-up, Incl. 67	1
67	PQM30001-171	Spring		1
68	PQM30017-12	Slit Washer	Loading Brake	1
69	PQ41379A	Gear Lever Assembly		1
70	PQ41162-1-2	Spring		1
71	PQM30017-13	Slit Washer	Guide Lever	1
72	PU57644-2	Reel Disk	Supply	1
73	PU57645	Reel Disk	Take-up	1
74	Q03093-828	Washer		4
75	PQM30017-5	Slit Washer	Reel Disks	2
76	PQ40285A	Main Brake Assembly	Take-up, Incl. 77–78	1
77	PQM30001-135	Spring		1
78	PQM30001-136	Spring		1
79	PQM30017-12	Slit Washer	Main Brake	1
80	PQ40288A	Main Brake Assembly	Supply, Incl. 81–82	1
81	PQM30001-135	Spring		1
82	PQM30001-136	Spring		1
83	PQM30017-12	Slit Washer	Main Brake	1
84	PQ30133-1-5	Main Brake Slider		1
85	PQM30017-8	Slit Washer	Main Brake Slider	2
86	PQM30001-178	Spring		1
87	PQ40291	Push Plate		1
88	PQM30017-8	Slit Washer	Push Plate	2
89	PU57658B-4	Clutch Mechanism Assembly	Inc. 90–95	1
90	PU56043-1-4	Clutch	Take-up	1
91	PU56044-2-5	Clutch	Supply	1
92	Q03093-827	Washer		2
93	PQM30017-2	Slit Washer	Clutches	2
94	PQM30001-140	Spring		1
95	PQM30001-139	Spring		1
96	SPSP3006Z	Screw	Clutch Mechanism	3
97	PQ41384A	Guide Arm Assembly	Incl. 98	1
98	PQ41405	Spring		1
99	PQM30017-8	Slit Washer	Guide Arm	1
100	PQ41389B	Motor Brake Assembly	Incl. 101	1
101	PQM30001-187	Spring		1
102	PQM30017-12	Slit Washer	Motor Brake	1
103	PQ40354E-3	Pole Base Assembly	Take-up	1
104	PQ40295	Flange Screw	Pole Base	1
105	PQ40357B-2	Pole Base Assembly	Supply	1
106	PQ40295	Flange Screw	Pole Base	1
107	—	Cassette LED Board Assembly	Refer to [15]	1
108	DPSP3006Z	Screw	Cassette LED Board	1
⚠109	PU57647V	Capstan Motor	or PU57647W	1
110	SDSP2603Z	Screw	Capstan Motor	3
111	PQM30003-10	Belt	Reel	1
112	PU56930-2	Brush Assembly		1
113	SPSP3003Z	Screw	Brush	1
114	PQ41282	Earth Plate		1
115	DSPS3005N	Screw	Earth Plate	1
116	—	Take-up Sensor Board Assembly	Reel Sensor, Refer to [22]	1
117	—	Mode Sensor Board Assembly	Refer to [14]	1
118	—	Deck Terminal Board Assembly	Refer to [20]	1
119	SPST3008Z	Tapping Screw	Take-up Sensor Board	1
120	DPSP3010Z	Screw	Mode Sensor Board	1
121	SDSP2608Z	Screw	Deck Terminal Board	2

NOTES: [M] indicates mechanical symbol number.
[2 digits] indicates circuit board symbol number.

4.2.5 Cassette housing assembly [M5]



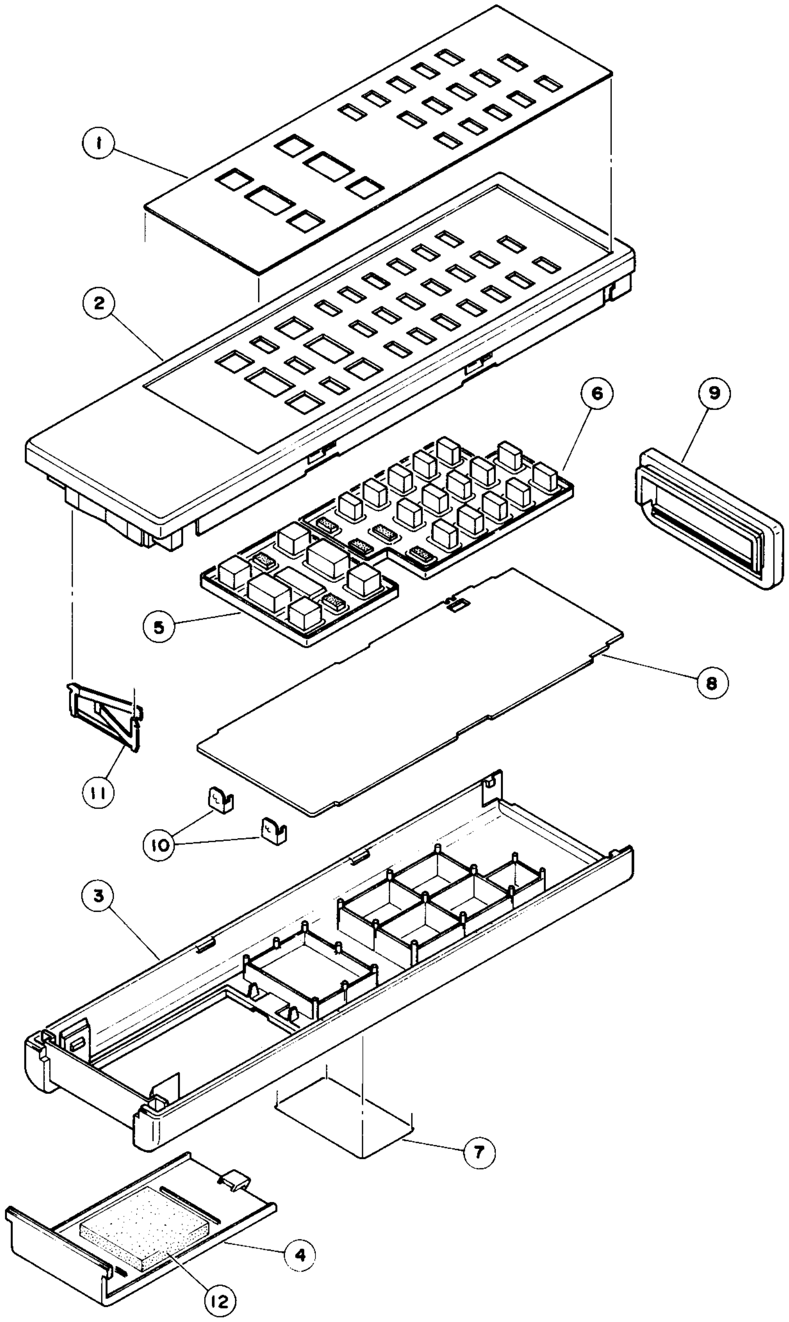
Cassette housing assembly [M5]

Ref. No.	Part No.	Part Name	Description	Q'ty
—	PUS26805U	Cassette Housing Assembly	Incl. 1—67	1
1	PQ30033D-4	Guide Stay (R) Assembly		1
2	PQ30276B-3	″ (L) Assembly		1
3	PQ40059	Gear (1)	Left and Right	2
4	PQ40060	″ (2)	″	2
5	PQ40061	Double Cap		2
6	PQ40102A-1	Door Guide Assembly	Incl. 7, Guide Stay (R)	1
7	PUM30001-111	Spring		1
8	PQ40063	Guide Lever	Guide Stay (R)	1
9	PQ40103A	Connect Gear Assembly		1
10	PUM30017-11	Slit Washer	Connect Gear Assembly	1
11	PQ40065	Cam Gear (2)	Guide Stay (R)	1
12	PQ30028	″ (1)		1
13	PQ40066-1-2	Loading Slide Gear		1
14	PQ40067-1-2	UL Slide Gear	Unloading	1
15	PQ40068-2	Limitter Spring	Cam Gear (1)	1
16	PQ40484	Worm Wheel		1
17	PUM30017-4	Slit Washer	Worm Assembly	1
⚠ 18	PQ40090A	Motor Assembly	Cassette Motor	1
19	PU45811	Ferrite Beads	Motor Assembly	2
20	PQ40091B	Worm Assembly		1
21	Q03093-838	Washer	Worm Assembly	2
22	SPSP2604Z	Screw	Motor Assembly	2
23	PQ40074	Upper Door Opener		1
24	PQ40075-1-5	Lower Door Opener		1
25	PQ40076-2	Hold Lever	Lower Door Opener	1
26	REE2500X	E-Ring	Hold Lever	1
27	PU51259-3	Leaf Switch	Rec Safety, Guide Stay (L)	1
28	PU55377-2	End Switch	Cassette Load End/Eject End	1
29	SPSP2010Z	Screw	Leaf Switch	1
30	SBSE2610Z	Tapping Screw	End Switch	1
31	—	Cassette Housing Board	Refer to [18]	1
32	—	End Sensor Board	Refer to [13]	1
33	PU48973-3	Stopper	Cassette Housing/End Sensor Boards	3
34	PQ30031-1-3	Cassette Holder		1
35	PQ40106B-1	Slide Plate (R) Assembly	Incl. 36	1
36	PUM30001-113	Spring		1
37	PQ40107B-1	Slide Plate (L) Assembly	Incl. 38	1
38	PUM30001-113	Spring		1
39	PQ10009-1-4	Bracket (Right)		1
40	PQ10009-2-3	″ (Left)		1
41	SPSP2003Z	Screw	Bracket (Right/Left)	2
42	PQ30208	Reinforcement		1
43	PQ40479	Guard	Reinforcement	1
44	PQ40108B-3	Lock Lever (R) Assembly	Incl. 45,46	1
45	PQM30019-10	Pad	Lock Lever (R)	1
46	PUM30001-110	Spring		1
47	PQ40109B-3	Lock Lever (L) Assembly	Incl. 48,49	1
48	PQM30019-10	Pad		1
49	PUM30001-110	Spring		1
50	PQ40081A	Switch Lever (R) Assembly	Insert Switch (Right)	1
51	PQ40081B	Switch Lever (L) Assembly	Insert Switch (Left)	1
52	PQ40083-1-1	Lid Opener	Bracket (Right)	1
53	PQ40084-1-2	Torsion Spring	Lid Opener	1
54	PU55378-1-1	Insert Switch (Right)	Cassette in Detector	1
55	PU55378-2-1	″ (Left)	″	1

Ref. No.	Part No.	Part Name	Description	Q'ty
56	SPSP1704Z	Screw	Insert Switch (Right/Left)	2
57	PQ40086	Roller	Guide Stay (Right/Left)	4
58	PQ40087-2	Mini Roller	〃	2
59	PQ20043	Roof Plate		1
60	PQ40440-1-1	Rod	Roof Plate	1
61	PQ40478-1-3	Upper Door Stopper		1
62	SBSE2608Z	Tapping Screw	Roof Plate	4
63	PQ40299	Wire Cap	Guide Stay (L)	1
64	QXT629H-015	UL Tube		1
65	QXT329H-035	〃		1
66	QXTF253-040	〃		1
67	PUM30017	Slit Washer	Worm Assembly	1

NOTES: [M] indicates mechanical symbol number.
[2 digits] indicates circuit board symbol number.

4.2.6 Remote control unit [M6]



Remote control unit [M6]

Ref. No.	Part No.	Part Name	Description	Q'ty
	—	Remote Control Unit	Refer to [M1], Incl. 1—12	1
1	PU35724-10-6	Top Panel	HR-D565E	1
	PU35724-7	Top Panel	HR-D565EG	1
	PU35724-6	Top Panel	HR-D565EK	1
2	PU35726-2	Top Case		1
3	PU35423-12	Bottom Case		1
4	PU35422-12	Battery Cap		1
5	PU35604-5	Button		1
6	PU35725-4	Button	HR-D565E/EG	1
	PU35725-3	Button	HR-D565EK	1
7	PU35432-49	Label	HR-D565E	1
	PU35432-45	Label	HR-D565EG/EK	1
8	—	Remote Contrl Board Assembly	Refer to [40]	1
9	PQ10181-004	Smoked Board	Infrared Window	1
10	PQ10181-005	Battery Terminal		2
11	PQ10181-006	Battery Terminal		1
12	PQ10181-007	Damper	Battery	1

SECTION 5
ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

RESISTORS—All resistance values are in ohms (Ω), unless otherwise indicated.

k : 1,000 (Kilo)
M : 1,000,000 (Mega)

Chip R : Chip Resistor
Chip VR : Chip Variable Resistor
Comp. R : Composition Resistor
CR : Carbon Film Resistor
FR : Fusible Resistor
MFR : Metal Film Resistor
MPR : Metal Plate Resistor
OMR : Oxide Metal Film Resistor
PMR : Precision Metal Film Resistor
UFR : Unflammable Resistor
VR : Variable Resistor (Potentiometer)
WR : Wire Wound Resistor

CAPACITORS—All capacitance values are in μF, unless otherwise indicated.

pF : μμF (Pico farad)

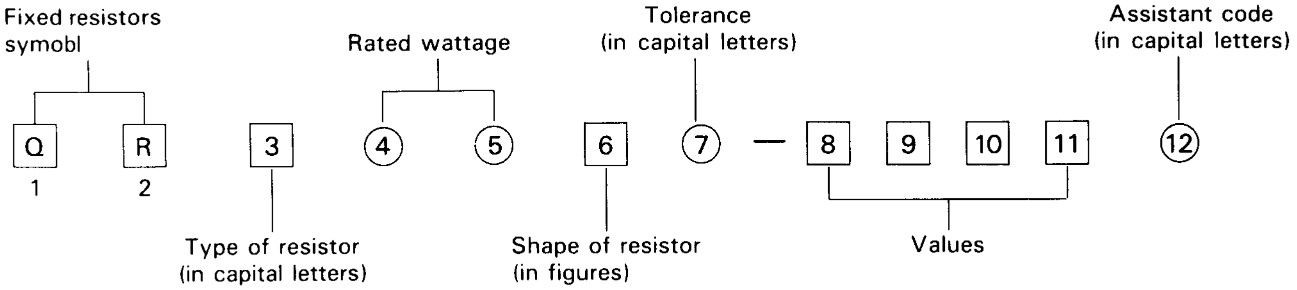
C Cap : Ceramic Capacitor
Chip Cap : Chip Capacitor
Chip T Cap: Chip Tantalum Capacitor
E Cap : Electrolytic Capacitor
FM Cap : Film Mica Capacitor
LL Cap : Low Leak Current Electrolytic Capacitor
MM Cap : Metalized Mylar Capacitor
MP Cap : Metalized Paper Capacitor
MY Cap : Mylar Capacitor
NP Cap : Non-polar Capacitor
PC Cap : Polycarbonate Capacitor
PP Cap : Polypropylene Capacitor
PS Cap : Polystyrol Capacitor
T Cap : Tantalum Capacitor
TF Cap : Thin Film Capacitor
TR Cap : Trimmer Capacitor

NOTE: [2 digits] indicate circuit board symbol number.

5.1 STANDARD PART NUMBER CODING

5.1.1 Fixed resistor coding

Fixed resistor part numbers are as follows.


Fixed resistors
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Rated wattage
Tolerance
(in capital letters)
Assistant code
(in capital letters)
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R
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④
⑤
6
⑦
—
8
9
10
11
⑫
Type of resistor
(in capital letters)
Shape of resistor
(in figures)
Values

Type of resistor (third digit)

C	Composition resistors
D	Carbon film resistors
F	Unflammable resistors
G	Oxide metal film resistors
H	Fusible resistors
M	Metal plate resistors
S	Metal glazed resistors
V	Precision metal film resistors
W	Wire wound resistors
X	Metal film resistors
Z	Special resistors

Rated wattage (fourth and fifth digits)

A0	1/10 W
18	1/8 W
16	1/6 W
14	1/4 W
12	1/2 W
01	1 W
02	2 W
03	3 W
04	4 W
05	5 W
06	6 W
07	7 W
75	7.5 W
08	8 W
10	10 W
15	15 W
A6	16 W
20	20 W
30	30 W

Tolerance (seventh digit)

F	±1 %
G	±2 %
J	±5 %
K	±10 %
M	±20 %

Assistant code (twelfth digit)

A	Small type
B	Small type
S	Small type
Y	Lead taping
Z	Lead taping

Values (eighth — tenth or eleventh digits)

examples:

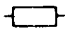
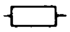
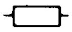
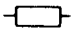
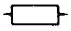
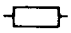
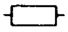
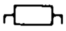
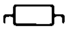
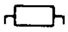
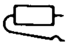
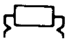
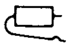
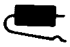
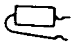
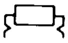
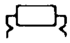
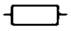
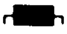
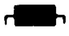
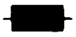
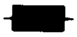
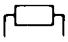
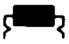
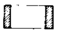
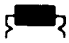
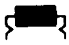
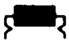
R47		0.47 Ω
4R7		4.7 Ω
470	47×10^0	47 Ω
471	47×10^1	470 Ω
472	47×10^2	4.7 kΩ
473	47×10^3	47 kΩ
474	47×10^4	470 kΩ
475	47×10^5	4.7 MΩ

QRV resistance shown by four digits:

4640	464×10^0	464 Ω
4641	464×10^1	4.64 kΩ
4642	464×10^2	46.4 kΩ

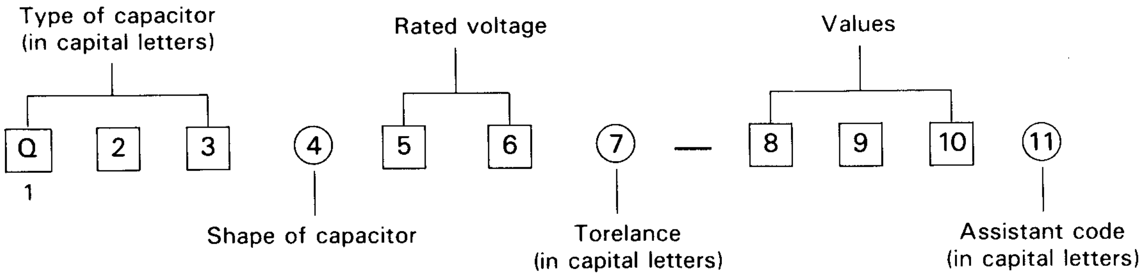
Shape of resistor (sixth digit)

Note: ■ marks are flame retardant resistor.

Type of resistor Shape of resistor	C	D	F	G	H	M	S	V	W	X
1										
2										
3										
4										
5									(L) type	
6										
7			Lug (B) type							
8			Lug (A) type				 Chip			
9			Lug (C) type							

5.1.2 Fixed capacitor coding

Fixed capacitor part numbers are as follows.


Type of capacitor
(in capital letters)
Rated voltage
Values
Q
2
3
④
5
6
⑦
—
8
9
10
⑪
1
Shape of capacitor
Torelance
(in capital letters)
Assistant code
(in capital letters)

Ceramic capacitors

Type of capacitor (first — third digits)		Shape of capacitor (fourth digit)				
Symbol	Characteristics	Mono-direction	Kink lead	Axial lead	Axial forming lead	Chip
QCC	Ceramic	1		4	5	
QCD	High capacitance					A
QCF	High capacitance	1,4	3			8,A
QCS	Temperature compensation	1	3	4	5	8,A
QCT	Temperature compensation	Special coding				8,A
QCV	Ceramic			1	3	
QCX	Ceramic			1	3	
QCY	High capacitance	1,4	3	6	7	8,A
QCZ	Special type	Special coding				

Electrolytic capacitors

Type of capacitor (first-third digits)		Shape of capacitor (fourth digit)				
Symbol	Characteristics	Tubular	Mono-direction	Anti-stress	Forming	Snap-in
QEB	Low leakage		4	5	6	
QEC	Low leakage		4,8,A	9,B	6,C	
QEE	Tantalum (normal)		4	5	6	
	Tantalum (small)		8			
QEF	Chip tantalum	8 (chip type)				
QEG	Low impedance		4			
QEK	Miniature type		4	5	6	
QEL	Small type		4	5	6	7
QEM	Small type		4	5	6	
QEN	Non-polar	2	4	5	6	
QEP	Non-polar (small)		4,A	5,B	6,C	
QER	Miniature type		4	5	6	
QET	Small type	2	4	5,B	6,C	7
QEU	Small type		4	5	6	
QEV	Small type		4		6	7
QEW	Normal	2	4	5	6	7

Paper film capacitors

Type of capacitor (first — third digits)		Shape of capacitor (fourth digit)				
		Tubular	Normal		Flame retardant	
Symbol	Characteristics		Mono-direction	Kink lead	Mono-direction	Kink lead
QFA	Metalized polypropylene				7	
QFE	Metalized mylar				5	
QFF	Film mica		4			
QFG	Polypropylene film		4	8		
QFH	Metalized mylar	2	4	3	5,7	6
QFJ	Mylar (special)		4			
QFK	Metalized mylar (small)				5	
QFM	Mylar	2	4	3,7	5	6
QFN	Mylar (small)		4	3		
QFP	Polypropylene		4	3,8		
QFS	Polystyrole	2	4	3		
QFV	Thin film		4	8		
QFZ	Special type	Special coding				

Rated voltage (fifth and sixth digits)

Sixth digit / Fifth digit	A	B	C	D	E	F	G	H	J	K	V	W	X
0						3.15	4.0		6.3				
1	10		16	20	25		40	50	63	80	35		
2	100	125	160	200	250	315	400	500	630		350	450	600
3	1000	1250		2000				5000					

Tolerance (seventh digit)

A	$^{+100}_{-10}$ %	M	±20 %
F	±1 %	N	±30 %
G	±2 %	P	$^{+100}_{-0}$ %
H	$^{+50}_{-10}$ %	R	$^{+30}_{-10}$ %
J	±5 %	X	$^{+40}_{-20}$ %
K	±10 %	Z	$^{+80}_{-20}$ %

Values (eighth — tenth digits)

Example : Values are in picofarads

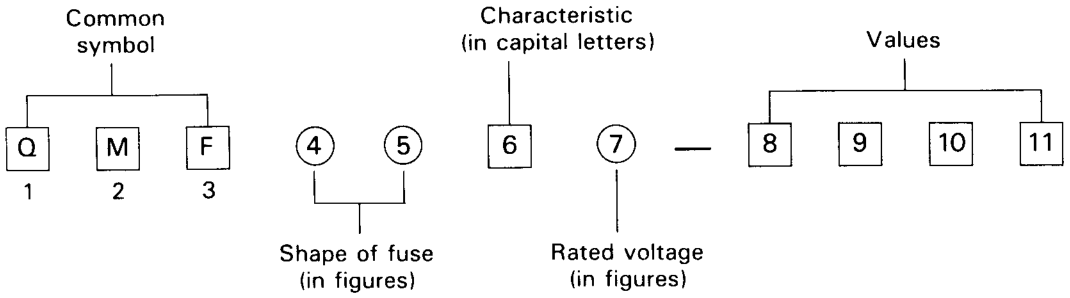
101	10×10^1 pF	100 pF
102	10×10^2 pF	1,000 pF (0.001 μF)
103	10×10^3 pF	10,000 pF (0.01 μF)
104	10×10^4 pF	100,000 pF (0.1 μF)
105	10×10^5 pF	1 μF
5R0		5.0 pF

Assistant code (eleventh digit)

G	Small size
Z	Lead taping

5.1.3 Fuse coding

Standard fuse part numbers are as follows.


Common
symbol
Characteristic
(in capital letters)
Values
Q
M
F
1
2
3
④
⑤
6
⑦
8
9
10
11
Shape of fuse
(in figures)
Rated voltage
(in figures)

Shape of fuse
(fourth and fifth digits)

51	φ5.2 × 20 mm
60	φ6.4 × 30 mm
61	φ6.35 × 31.8 mm
63	φ6.4 × 30 mm with lead wires
66	φ6.35 × 31.8 mm with lead wires
00	Special type

Rated voltage
(seventh digit)

1	AC125 V
2	AC250 V
3	0.1 – 1 A : AC250 V 1.25 – 6.3 A : AC125 V

Values
(eighth-tenth or eleventh digits)
example:

R63	.... 0.63 A
1R0	.... 1.0 A
2R5	.... 2.5 A
100	.... 10 A
R315	.... 0.315 A
1R25	.... 1.25 A

Characteristics (sixth digit)

Symbol	Fusing Current	Fusing Time	Remarks
A	210 %	Within 2 min.	Anti-rush type (for Europe)
	275 %	0.6 – 10 sec.	
	400 %	0.15 – 3 sec.	
	1000 %	0.02 – 0.3 sec.	
B	210 %	Within 30 min.	Regular fusible type (for SEMKO, Europe)
	275 %	0.05 – 2 sec.	
	400 %	0.01 – 0.3 sec.	
C	135 %	Within 1 hr.	Regular fusible type (for UL, Japan)
	200 %	Within 2 min.	
E	210 %	Within 2 min.	Anti-rush type (for Europe)
	275 %	0.6 – 10 sec.	
	400 %	0.15 – 3 sec.	
	1000 %	0.02 – 0.3 sec.	
J	135 %	Within 1 hr.	Anti-rush type
	200 %	Within 2 min.	
M	135 %	Within 1 hr.	Regular fusible type (for UL)
	200 %	Within 2 min.	
R	160 %	Within 1 hr.	Regular fusible type
	200 %	Within 2 min.	
S	160 %	Within 1 hr.	Anti-rush type
	200 %	Within 2 min.	
	700 % – 2000 %	Within 0.01 sec.	
U	135 %	Within 1 hr.	Anti-rush type (for UL)
	200 %	Within 2 min.	
	800 % – 2000 %	Within 0.01 sec.	

5.2 ELECTRICAL PARTS LIST BY ASSEMBLIES

5.2.1 Regulator board assembly [01] PU22138A1-1

Symbol No.	Part No.	Part Name	Description
Q1	–	–	
Q2	2SD1275P,Q	Transistor	
Q3	–	–	
Q4	2SD1275P,Q	Transistor	
Q5	2SD637R,S	Transistor	
Q6	–	–	
Q7	–	–	
Q8	2SD637R,S	Transistor	
Q9	–	–	
Q10	2SD1275P,Q	Transistor	
Q11	2SD637R,S	Transistor	
Q12	2SD1266P,Q	Transistor	
Q13	2SD637R,S	Transistor	
Q14	2SC3243D,E	Transistor	
Q15	2SB1015O,Y	Transistor	
D1	30D2	Diode	
D2	10E2	Diode	
D3	30D2	Diode	
D4	10E2	Diode	
D5	HZ12B3L	Zener Diode	
D6	20E2	Diode	
D7	20E2	Diode	
D8	11E2	Diode	
D9	HZ6C1	Zener Diode	
D10	11E2	Diode	
D11	HZ6C1L	Zener Diode	
D12	11E2	Diode	
D13	11E2	Diode	
D14	HZ15-2	Zener Diode	
D15	MA150	Diode	
D16	HZ15-2	Zener Diode	
D17	11E2	Diode	
D18	11E2	Diode	
D19	11E2	Diode	
D20	11E2	Diode	
D21	MA27	Diode	
D22	HZ6C1L	Zener Diode	
R1	QRD181J-272	CR	
R2	QRD181J-102	CR	
R3	QRD181J-681	CR	
R4	QRD181J-272	CR	
R5	QRD181J-103	CR	
R6	QRD181J-682	CR	
R7	QRD181J-562	CR	
R8	QRD181J-562	CR	
R9	QRD181J-272	CR	
R10	QRD181J-561	CR	
R11	QRD181J-331	CR	
R12	QRD181J-681	CR	
R13	QRD181J-271	CR	
R14	QRD181J-221	CR	
R15	QVZ3521-221	VR	DC 5V
R16	QRD181J-182	CR	
R17	QRD122J-392	CR	
⚠R18	QRG019J-222S	OMR	
R19	QRD181J-472	CR	
R20	QRD181J-473	CR	
R21	QVZ3521-222	VR	DV 9V
R22	QRD181J-331	CR	
⚠R23	QRG019J-181	OMR	
⚠R24	PU58802-330	Posistor	
R25	QRD181J-102	CR	
R26	QRD181J-102	CR	
R27	QRD181J-102	CR	
R28	QRD181J-221	CR	
R29	QRD181J-102	CR	
C1	QFK52AK-473	MM Cap	
C2	QETB1VM-108	E Cap	
C3	QCF31HP-103	C Cap	
C4	QETB1VM-338	E Cap	
C5	QET61CM-107	E Cap	
C6	QET61CM-107	E Cap	
C7	QET61CM-107	E Cap	
C8	QETB1CM-228	E Cap	
C9	QET61CM-336	E Cap	
C10	QET60JM-476	E Cap	
C11	QETC1JM-476	E Cap	
C12	QETB1JM-227	E Cap	
C13	QETB1HM-227	E Cap	
C14	QET61HM-226	E Cap	
C15	–	–	
C16	–	–	
C17	–	–	
C18	QCF31HP-222	C Cap	
C19	–	–	
C20	QCF31HP-103	C Cap	
C21	QCF31HP-222	C Cap	
CN1	PU49215-111	Cap Housing	
CN2	PU49215-105	Cap Housing	
CN3	PU49215-104	Cap Housing	
CN4	PU43351-103	Cap Housing	
CN5	PU50597-4	Cap Housing	
CN6	PU43351-102	Cap Housing	
CN7	PU49215-102	Cap Housing	
TP	PU55774	Test Pin	TP1,2, GND
⚠HTS1	PQ30785	Heat Sink	
⚠SCR1	DPSP3006Z	Screw	
⚠SCR2	DPSP3008Z	Screw	for Q2,4,10,12
⚠HD1	PU57505	Fuse Holder	

The following fuse are not included in PU22138A1-1

Symbol No.	Part No.	Part Name	Description
⚠F2	QMF51E2-2R5	Fuse	
⚠F3	QMF51E2-R63	Fuse	

5.2.2 Video/audio/FM audio board assembly [02]

HR-D565E/EG PU11289A-1

HR-D566EK PU11289B-1

—Video section—

Symbol No.	Part No.	Part Name	Description
IC1	HA11839NT	Integrated Circuit	
⚠ IC2	PU22199A	Y Mod. PWB Ass'y	
Q1	2SC2021Q,R,S	Transistor	
Q2	2SC2021Q,R,S	Transistor	
Q3	2SC2021Q,R,S	Transistor	
Q4	2SC2021Q,R,S	Transistor	
Q5	2SC2021Q,R,S	Transistor	
Q6	2SB641Q,R	Transistor	
Q7	2SB810H,J	Transistor	
Q8	2SA564Q,R	Transistor	
	or 2SA564AQ	Transistor	
Q9	DTC144WF	D Transistor	
Q10	2SA564Q,R	Transistor	
	or 2SA564AQ	Transistor	
Q11	2SC2021Q,R,S	Transistor	
Q12	–	–	
Q13	–	–	
Q14	DTC144EF	D Transistor	
Q15	–	–	
Q16	2SC2021Q,R,S	Transistor	
Q17	2SC2021Q,R,S	Transistor	
Q18	2SK381C	FET	
Q19	2SB641Q	Transistor	
D1	–	–	
D2	MA165	Diode	
	or 1SS133	Diode	
D3	MA165	Diode	
	or 1SS133	Diode	
D4	–	–	
D5	MA165	Diode	
	or 1SS133	Diode	
D6	MA165	Diode	
	or 1SS133	Diode	
D7	–	–	
D8	MA165	Diode	
	or 1SS133	Diode	
D9	MA165	Diode	
	or 1SS133	Diode	
⚠ CP1	ICP-N10	Circuit Protector	
R1	QRD161J-560	CR	
R2	QRD161J-330	CR	
R3	QRD161J-3R9	CR	
R4	QRD161J-122	CR	
R5	QRD161J-330	CR	
R6	QRD161J-3R9	CR	
R7	QRD161J-122	CR	
R8	QRD161J-560	CR	
R9	QRD161J-100	CR	
R10	QRD161J-272	CR	
R11	QRD161J-100	CR	
R12	QRD161J-272	CR	
R13	QRD161J-331	CR	

Symbol No.	Part No.	Part Name	Description
R14	–	–	
R15	–	–	
R16	QVZ3518-102	VR	CH1 Q
	or QVZ3523-102	VR	
R17	QVZ3518-102	VR	CH2 Q
	or QVZ3523-102	VR	
R18	QRD161J-4R7	CR	
R19	–	–	
R20	QRD161J-103	CR	
R21	QRD161J-102	CR	
R22	QRD161J-332	CR	
R23	QRD161J-152	CR	
R24	QRD161J-102	CR	
R25	QRD161J-222	CR	
R26	QRD161J-271	CR	
R27	QVZ3518-472	VR	PB EQ
R28	QRD161J-391	CR	
R29	QRD161J-391	CR	
R30	QRD161J-102	CR	
R31	QRD161J-471	CR	
R32	QRD161J-223	CR	
R33	QRD161J-182	CR	
R34	QRD161J-393	CR	
R35	QRD161J-821	CR	
R36	QRD161J-103	CR	
R37	QRD161J-393	CR	
R38	QRD161J-821	CR	
R46	QRD161J-335	CR	
R47	QRD161J-102	CR	
R48	QVZ3518-102	VR	REC FM LEVEL
	or QVZ3523-102	VR	
R49	QRD161J-102	CR	
R50	QRD161J-183	CR	
R51	–	–	
R52	QRD161J-222	CR	
R53	QRD161J-153	CR	
R54	QRD161J-684	CR	
R55	QRD161J-824	CR	
R56	QRD161J-102	CR	
R57	–	–	
R58	–	–	
R59	–	–	
R60	QRD161J-225	CR	
R61	QRD161J-475	CR	
R62	QRD161J-562	CR	
R63	QRD161J-271	CR	
R64	–	–	
R65	QRD161J-181	CR	
R66	QRD161J-181	CR	
R67	–	–	
R68	–	–	
R69	–	–	
R70	–	–	
R71	QVZ3518-474	VR	SW POINT
	or QVZ3523-474	VR	
R72	QRD161J-223	CR	
R73	QRD161J-223	CR	
R74	QRD161J-102	CR	
R75	QRD161J-102	CR	

(Video)

Symbol No.	Part No.	Part Name	Description
R76	QRD161J-391	CR	
R77	QRD161J-391	CR	
R78	QRD161J-471	CR	
R79	QRD161J-331	CR	
R80	QRD161J-103	CR	
R81	QVZ3518-473	VR	SHARPNESS PRESET
R82	QRD161J-222	CR	
C1	PU57275-600	TR Cap	60P, CH-1 fo
C2	PU57257-600	TR Cap	60P, CH-2 fo
C3	QET61HM-474	E Cap	
C4	QFN31HK-332	MY Cap	
C5	QCVB1CN-103	C Cap	
C6	QET61HM-474	E Cap	
C7	QFN31HK-332	MY Cap	
C8	QCVB1CH-103	C Cap	
C9	QCVB1CN-103	C Cap	
C10	QCVB1CN-103	C Cap	
C11	QCVB1CN-103	C Cap	
C12	QET61CM-106	E Cap	
C13	QCVB1CN-103	C Cap	
C14	QCVB1CN-103	C Cap	
C15	QET61AM-476	E Cap	
C16	QCVB1CN-103	C Cap	
C17	–	–	
C18	–	–	
C19	QCVC1CN-103	C Cap	
C20	QET61HM-104	E Cap	
C21	QCVB1CN-103	C Cap	
C22	QCVB1CN-103	C Cap	
C23	QCVB1CN-103	C Cap	
C24	QCVB1CN-103	C Cap	
C25	QCSB1HK-8R2	C Cap	
C26	QCSB1HJ-470	C Cap	
C27	QCSB1HJ-470	C Cap	
C28	QCVB1CN-103	C Cap	
C29	QCVB1CN-103	C Cap	
C30	QCSB1HJ-270	C Cap	
C31	QCVB1CN-103	C Cap	
C32	QCSB1HJ-270	C Cap	
C33	QCSB1HJ-120	C Cap	
C34	QET61HM-105	E Cap	
C35	QET61HM-105	E Cap	
C36	QEM51AK-107	E Cap	
C37	QET61HM-225	E Cap	
C38	QCBB1HJ-121	C Cap	
C39	QCBB1HJ-121	C Cap	
C40	QCVB1CN-103	C Cap	
C41	QET60JM-107	E Cap	
C42	QET61EM-335	E Cap	
C43	QET61HM-105	E Cap	
C44	QET61HM-225	E Cap	
C45	QET61EM-335	E Cap	
C46	QET61HM-225	E Cap	
C47	QET61EM-475	E Cap	
C48	QET61EM-335	E Cap	

Symbol No.	Part No.	Part Name	Description
C49	–	–	
C50	QEK61CM-476	E Cap	
C51	QCVB1CN-103	C Cap	
C52	QCSB1HJ-270	C Cap	
C53	QCS11HJ-681	C Cap	
C54	QCVB1CN-103	C Cap	
C55	–	–	
C56	QCSB1HJ-330	C Cap	
C57	QCBB1HJ-151	C Cap	
C58	–	–	
C59	QET61AM-476	E Cap	
C60	QET60JM-107	E Cap	
C61	QFN31HJ-223	MY Cap	
C62	QFN31HJ-223	MY Cap	
C63	–	–	
C64	QFN41HJ-333	MY Cap	
C65	QCBB1HJ-820	C Cap	
C66	QCBB1HJ-820	C Cap	
C67	QCVB1CN-103	C Cap	
C68	–	–	
C69	QCSB1HJ-220	C Cap	
C70	QCVB1CN-103	C Cap	
C71	QCBB1HJ-181	C Cap	
C72	QCBB1HJ-820	C Cap	
C73	QCVB1CN-103	C Cap	
L1	PU48530-101K	Peaking Coil	
L2	PU48530-101K	Peaking Coil	
L3	–	–	
L4	PU48530-390J	Peaking Coil	
L5	PU48530-220J	Peaking Coil	
L6	PU48530-270J	Peaking Coil	
L7	PU48530-270J	Peaking Coil	
L8	PU53223-101J	Peaking Coil	
L9	PU48530-151J	Peaking Coil	
L10	PU48530-121J	Peaking Coil	
L11	PU48530-101J	Peaking Coil	
L12	PU48530-221J	Peaking Coil	
L13	PU48530-680J	Peaking Coil	
L14	PU48530-180J	Peaking Coil	
L15	PU48530-180J	Peaking Coil	
L16	PU48530-471J	Peaking Coil	
L17	PU48530-121K	Peaking Coil	
L18	PU48530-151J	Peaking Coil	
L19	PU48530-101K	Peaking Coil	
L20	PU48530-120J	Peaking Coil	
L21	PU48530-100J	Peaking Coil	
L22	PU48530-100J	Peaking Coil	
L23	–	–	
L24	–	–	
L25	PU48530-121J	Peaking Coil	
DL1	PGZ00149	1H Delay Line	
LPF1	PU58021-2	Low Pass Filter	

Symbol No.	Part No.	Part Name	Description
CN1	PU49215-6	Cap Housing	
CN2	PU49215-5	Cap Housing	
CN3	PU49215-6	Cap Housing	
CN4	PU49215-6	Cap Housing	
CN5	PU49215-5	Cap Housing	
CN6	PU49215-7	Cap Housing	
CN7	PU49215-2	Cap Housing	
CN8	PU49215-5	Cap Housing	
TP	PU50766	Test Pin	TP3,6,10,11, 23–24,26 31–33
SC1	PU58534-1-1	Preamp Shield	
SC2	PU57796	Preamp Shield	
SPC1	PQM30029-10	Spacer	

–Colour section–

Symbol No.	Part No.	Part Name	Description
⚠ IC101	PU22046A	C Mod. PWB Ass'y	
IC102	BA7007	Integrated Circuit	(E/EG only)
Q101	2SC2021Q,R,S	Transistor	
Q102	2SC2021Q,R,S	Transistor	
Q103	DTC144EF	D Transistor	
Q104	2SC2021Q,R,S	Transistor	
Q105	2SC2021Q,R,S	Transistor	
Q106	2SC2021Q,R,S	Transistor	(E/EG only)
Q107	2SC2021Q,R,S	Transistor	(E/EG only)
Q108	2SC2021Q,R,S	Transistor	
Q109	2SB641Q,R	Transistor	
Q110	2SB641Q,R	Transistor	
Q111	–	–	
Q112	–	–	
Q113	2SB641Q,R	Transistor	
Q114	DTC124EN	D Transistor	
	or DTC124ES	D Transistor	
Q115	DTC144EF	D Transistor	
Q116	DTC114EF	D Transistor	
Q117	2SC2021Q,R,S	Transistor	
D101	MA165	Diode	(E/EG only)
	or 1SS133	Diode	(E/EG only)
D102	MA165	Diode	(E/EG only)
	or 1SS133	Diode	(E/EG only)
D103	MA165	Diode	(E/EG only)
	or 1SS133	Diode	(E/EG only)
D104	MA165	Diode	(E/EG only)
	or 1SS133	Diode	(E/EG only)
D105	MA165	Diode	(E/EG only)
	or 1SS133	Diode	(E/EG only)
D106	MA165	Diode	(E/EG only)
	or 1SS133	Diode	(E/EG only)
D107	–	–	
D108	–	–	
D109	–	–	
D110	1SS133	Diode	(E/EG only)
D111	1SS133	Diode	(E/EG only)
D116	1SS133	Diode	(E/EG only)
D117	1SS133	Diode	(E/EG only)
R101	QRD161J-102	CR	
R102	QRD161J-102	CR	
R103	QRD161J-681	CR	
R104	QRD161J-272	CR	
R105	QRD161J-102	CR	
R106	QRD161J-473	CR	
R107	QRD161J-102	CR	
R108	–	–	
R109	QRD161J-102	CR	
R110	QRD161J-222	CR	
R111	QVZ3518-151	VR	REC COLOUR LEVEL
	or QVZ3523-151	VR	
R112	QRD161J-122	CR	

(Colour)

Symbol No.	Part No.	Part Name	Description
R113	QRD161J-223	CR	
R114	QRD161J-223	CR	
R115	QRD161J-472	CR	
R116	QRD161J-274	CR	
R117	QVZ3518-223	VR	VXO
	or QVZ3523-223	VR	
R118	QRD161J-393	CR	
R119	QRD161J-122	CR	
R120	QRD167J-561	CR	
R121	QRD161J-391	CR	
R122	QRD161J-102	CR	
R123	QRD161J-122	CR	
R124	QRD161J-471	CR	
R125	QRD161J-152	CR	
R126	QRD161J-223	CR	
R127	QRD161J-682	CR	
R128	QRD161J-181	CR	
R129	QRD161J-102	CR	
R130	QRD161J-391	CR	
R131	QRD161J-331	CR	
R132	QRD161J-393	CR	(E/EG only)
R133	QRD161J-822	CR	(E/EG only)
R134	QRD161J-154	CR	(E/EG only)
R135	QRD161J-563	CR	(E/EG only)
R136	QRD161J-182	CR	(E/EG only)
R137	QVZ3518-472	VR	SECAM DET
	or QVZ3523-472	VR	(E/EG only)
R138	QRD161J-103	CR	(E/EG only)
R139	QRD161J-562	CR	(E/EG only)
R140	QRD161J-333	CR	(E/EG only)
R141	QRD161J-393	CR	(E/EG only)
R142	QRD161J-332	CR	(E/EG only)
R143	QRD161J-102	CR	(E/EG only)
R144	QRD161J-393	CR	(E/EG only)
R145	QRD161J-272	CR	
R146	QRD161J-221	CR	
R147	QRD161J-331	CR	
R148	QRD161J-181	CR	
R149	QRD121J-391	CR	
R150	–	–	
R151	QRD161J-102	CR	
R152	QRD161J-102	CR	
R153	QRD161J-222	CR	
R159	QRD161J-750	CR	
R160	–	–	
R161	QRD161J-102	CR	
R162	QRD161J-221	CR	
R163	–	–	
R164	–	–	
R165	QRD161J-102	CR	
R166	QRD161J-561	CR	
R167	QRD161J-562	CR	
R168	QRD161J-682	CR	
R169	QRD161J-183	CR	
R170	QRD167J-223	CR	
R171	QRD167J-223	CR	
R172	QRD161J-102	CR	
R173	QRD161J-152	CR	
R174	QRD161J-332	CR	

Symbol No.	Part No.	Part Name	Description
R175	QRD161J-223	CR	(E/EG only)
R176	QRD161J-333	CR	(E/EG only)
R177	QRD161J-103	CR	(E/EG only)
C101	QCBB1HJ-102	C Cap	
C102	QFN31HK-473	MY Cap	
C103	QET61CM-106	E Cap	
C104	QCVB1CN-103	C Cap	
C105	QFN41HJ-682	MY Cap	
C106	QCT25CH-220	C Cap	
C107	QFN31HK-223	MY Cap	
C108	QET61HM-105	E Cap	
C109	QET61HM-105	E Cap	
C110	QET60JM-476	E Cap	
C111	QET61EM-475	E Cap	
C112	QET61EM-335	E Cap	
C113	QFN31HK-473	MY Cap	
C114	QFN31HK-563	MY Cap	
C115	–	–	
C116	QET61CM-106	E Cap	
C117	QFN31HK-224	MY Cap	
C118	QET61HM-225	E Cap	
C119	QCVB1CN-103	C Cap	
C120	QCBB1HJ-102	C Cap	(E/EG only)
C121	QCBB1HJ-102	C Cap	
C122	QCVB1CN-103	C Cap	
C123	QET60JM-476	E Cap	
C124	QCVB1CN-103	C Cap	(E/EG only)
C125	QET61CM-476	E Cap	(E/EG only)
C126	QET61AM-336	E Cap	(E/EG only)
C127	QFN31HK-182	MY Cap	(E/EG only)
C128	QFN31HK-272	MY Cap	(E/EG only)
C129	QFN31HK-223	MY Cap	(E/EG only)
C130	QET61CM-106	E Cap	(E/EG only)
C131	QCVB1CN-103	C Cap	(E/EG only)
C132	–	–	
C133	QET60JM-476	E Cap	
C134	–	–	
C135	–	–	
C136	QCVB1CN-103	C Cap	
C137	QET61CM-476	E Cap	
C138	QETC0JM-477	E Cap	
C139	QCVB1CN-103	C Cap	
C140	QCBB1HJ-101	C Cap	
C141	QCVB1CN-103	C Cap	
C142	QET61CM-106	E Cap	
C143	QCSB1HJ-100	C Cap	
C144	QET61EM-475	E Cap	
C145	–	–	
C146	–	–	
C147	–	–	
C148	QFN31HJ-822	MY Cap	
C149	QFN31HJ-822	MY Cap	
C150	QET61AM-336	E Cap	
C151	QCVB1CN-103	C Cap	
C152	QCS11HJ-470	C Cap	
C153	QCSB1HJ-470	C Cap	
C154	QET61CM-336	E Cap	(E/EG only)

Symbol No.	Part No.	Part Name	Description
L101	PU48530-222J	Peaking Coil	
L102	PU48530-101K	Peaking Coil	
L103	PU48530-101K	Peaking Coil	
L104	PU47051-822	Choke Coil	
L105	PU48530-150J	Peaking Coil	
L106	PU48530-101K	Peaking Coil	
L107	PU48530-101K	Peaking Coil	(E/EG only)
L108	PU49057	Trap Coil	(E/EG only)
L109	PU47051-562	Choke Coil	(E/EG only)
L110	PU48530-101K	Peaking Coil	
L111	PU48530-560J	Peaking Coil	
L112	PU48530-821J	Peaking Coil	
L113	PU48530-271J	Peaking Coil	
LPF101	PU58705	Low Pass Filter	
LPF102	PU54988	Low Pass Filter	
BPF101	PU54410-2	Band Pass Filter	
BPF102	PU57072	Band Pass Filter	
EQ101	PU53501-4	Equalizer	
EQ102	PU54838	Equalizer	(E/EG only)
⚠ CF101	PU56983	Ceramic Filter	(E/EG only)
⚠ X101	PU31449-4K	Crystal	
⚠ XB101	PU58023	Crystal Block	
⚠	or PU58126	Crystal Block	
DL101	PU55808	2H Delay Line	
	or PU55253	2H Delay Line	
TP	PU50766	Test Pin	TP101,104,106 110,121–123, GND1,2

—FM audio section—

Symbol No.	Part No.	Part Name	Description
IC201	—	—	
IC202	TA78L005AP	Integrated Circuit	
IC203	—	—	
IC204	EHMB9840C13	Integrated Circuit	
IC205	BA7057	Integrated Circuit	
IC206	HA12072NT	Integrated Circuit	
IC207	UPD4053BP	Integrated Circuit	
IC208	AN3926K	Integrated Circuit	
Q201	2SC2021Q,R	Transistor	
Q202	2SB643Q	Transistor	
Q203	2SD638Q	Transistor	
Q204	2SB643Q	Transistor	
Q205	2SC2021Q,R	Transistor	
Q206	2SC2021Q,R	Transistor	
Q207	2SB643Q	Transistor	
Q208	DTC124EF	D Transistor	
Q209	DTC124EF	D Transistor	
Q210	2SC2021Q	Transistor	
Q211	2SC2021Q	Transistor	
Q212	—	—	
Q213	—	—	
Q214	2SB641Q	Transistor	
Q215	—	—	
Q216	—	—	
Q217	2SD638Q	Transistor	
Q218	2SC2021Q,R	Transistor	
Q219	2SC2021Q,R	Transistor	
Q220	DTC144EF	D Transistor	
Q221	2SD638Q	Transistor	
Q222	—	—	
Q223	DTA124EF	D Transistor	(E/EG only)
D201	1SS133	Diode	
D202	1SS133	Diode	
D203	—	—	
D204	1SS133	Diode	
D205	1SS133	Diode	
D206	1SS133	Diode	
D207	1SS133	Diode	(E/EG only)
R201	QRD161J-392	CR	
R202	QRD161J-183	CR	
R203	QRD161J-100	CR	
R204	QRD161J-102	CR	
R205	QRD161J-222	CR	
R206	QRD161J-222	CR	
R207	QRD161J-102	CR	
R208	QRD161J-100	CR	
R209	QRD161J-102	CR	
R210	QRD161J-151	CR	
R211	QRD161J-393	CR	
R212	QRD161J-102	CR	
R213	QRD161J-561	CR	
R214	QRD161J-223	CR	
R215	QRD161J-472	CR	
R216	QRD161J-472	CR	
R217	QRD161J-561	CR	

(FMA)

Symbol No.	Part No.	Part Name	Description
R218	QRD161J-392	CR	
R219	QRD161J-561	CR	
R220	QRD161J-102	CR	
R221	QRD161J-102	CR	
R222	QRD161J-332	CR	
R223	QRD161J-103	CR	
R224	QRD161J-103	CR	
R225	QRD161J-562	CR	
R226	QRD161J-393	CR	
R227	QRD161J-102	CR	
R228	QVZ3518-103	VR	FM REC Level
R229	QRD161J-102	CR	
R230	QRD161J-472	CR	
R231	QRD161J-102	CR	
R232	QRD161J-102	CR	
R233	QRD161J-102	CR	
R234	QRD161J-102	CR	
R235	QVZ3518-102	VR	PB Level (R)
R236	QVZ3518-102	VR	PB Level (L)
R237	QRD161J-103	CR	
R238	QRD161J-272	CR	
R239	QRD161J-123	CR	
R240	QRD161J-151	CR	
R241	QRD161J-151	CR	
R242	–	–	
R243	–	–	
R244	–	–	
R245	–	–	
R246	QRD161J-104	CR	
R247	QVZ3518-472	VR	E-E Level (L)
R248	QRD161J-222	CR	
R249	QRD161J-102	CR	
R250	QVZ3518-472	VR	E-E Level (R)
R251	QRD161J-105	CR	
R252	QRD161J-563	CR	
R253	QRD161J-103	CR	
R254	QRD161J-105	CR	
R255	QRD161J-474	CR	
R256	QRD161J-221	CR	
R257	QRD161J-333	CR	
R258	QRD161J-103	CR	
R259	QRD161J-333	CR	
R260	QRD161J-103	CR	
R261	QRD161J-103	CR	
R262	QRD161J-105	CR	
R263	QRD161J-103	CR	
R264	QRD161J-105	CR	
R265	QRD161J-103	CR	
R266	QRD161J-474	CR	
R267	QVZ3518-103	VR	DC OFFSET CH-1
R268	QVZ3518-103	VR	DC OFFSET CH-2
R269	QRD161G-511	CR	
R270	QRD161J-472	CR	
R271	QRD161G-511	CR	
R272	QRD161J-472	CR	
R273	QRD161J-222	CR	
R274	QRD161J-102	CR	
R275	QRD161J-472	CR	
R276	QRD161J-472	CR	
R277	QRD161J-222	CR	
R278	QRD161J-102	CR	

Symbol No.	Part No.	Part Name	Description
R279	QRD161J-472	CR	
R280	QRD161J-472	CR	
R281	QRD161J-272	CR	
R282	QRD161J-182	CR	
R283	QRD161J-272	CR	
R284	QRD161J-182	CR	
R285	QRD161J-102	CR	
R286	QRD161J-225	CR	
R287	QRD161J-102	CR	
R288	QRD161J-225	CR	
R289	QVZ3518-472	VR	IND Level (L)
R290	QVZ3518-472	VR	IND Level (R)
R291	QRD161J-222	CR	
R292	QRD161J-222	CR	
R293	QRD161J-473	CR	
R294	QRD161J-473	CR	
R295	QRD161J-473	CR	
R296	QRD161J-272	CR	
R297	QRD161J-222	CR	
R298	QRD161J-222	CR	
R299	QRD161G-911	CR	
R300	QRD161G-162	CR	
R301	QRD161G-162	CR	
R302	QRD161G-911	CR	
R303	QRD161J-122	CR	
R304	QRD161J-182	CR	
R305	QRD161J-102	CR	
R306	–	–	
R307	–	–	
R308	QRD161J-0R0	CR	
R309	QRD161J-0R0	CR	
R310	QRD161J-221	CR	
R311	QRD161J-222	CR	
R312	QRD161J-102	CR	
R313	QRD161J-221	CR	
R314	QRD161J-122	CR	
R315	QRD161J-472	CR	
R316	QRD161J-472	CR	
R317	QRD161J-562	CR	
R325	QRD161J-122	CR	
R330	QRD161J-103	CR	
R331	QRD161J-561	CR	
R332	QRD161J-561	CR	
RA201	RGLD4X563J	Resistor Array	
RA202	RGLD4X563J	Resistor Array	
RA203	RGLD3X563J	Resistor Array	
RA204	RGLD3X563J	Resistor Array	
C201	QCF31HP-102	C Cap	
C202	QCF31HP-103	C Cap	
C203	QCF31HP-103	C Cap	
C204	QCF31HP-103	C Cap	

Symbol No.	Part No.	Part Name	Description
C205	QCF31HP-103	C Cap	
C206	QCS11HJ-680	C Cap	
C207	QCS31HJ-821	C Cap	
C208	QET61CM-476	E Cap	
C209	QCF31HP-102	C Cap	
C210	QCF31HP-103	C Cap	
C211	QCS31HJ-122	C Cap	
C212	QCF31HP-223	C Cap	
C213	QCF31HP-102	C Cap	
C214	QCF31HP-223	C Cap	
C215	QCS31HJ-101	C Cap	
C216	QCF31HP-223	C Cap	
C217	QET61CM-106	E Cap	
C218	QEN61CM-106	NP Cap	
C219	QCS31HJ-101	C Cap	
C220	QET61CM-106	E Cap	
C221	QCF31HP-223	C Cap	
C222	QET60JM-477	E Cap	
C223	QEN61CM-106	NP Cap	
C224	QET61CM-106	E Cap	
C225	QET61CM-106	E Cap	
C226	QFN31HJ-223	MY Cap	
C227	QET61CM-106	E Cap	
C228	QFN31HJ-562	MY Cap	
C229	QET61CM-106	E Cap	
C230	QFN31HJ-223	MY Cap	
C231	QFN31HJ-562	MY Cap	
C232	QET61CM-106	E Cap	
C233	QET61CM-106	E Cap	
C234	QET60JM-107	E Cap	
C235	QET61CM-106	E Cap	
C236	QET61CM-106	E Cap	
C237	QET61CM-106	E Cap	
C238	QET61CM-106	E Cap	
C239	QET61CM-106	E Cap	
C240	QET61CM-106	E Cap	
C241	QET60JM-107	E Cap	
C242	QET60JM-107	E Cap	
C243	QET61CM-476	E Cap	
C244	QET61CM-106	E Cap	
C245	QET61CM-106	E Cap	
C246	QET61CM-106	E Cap	
C247	QET61CM-106	E Cap	
C248	QET61HM-105	E Cap	
C249	QET60JM-476	E Cap	
C250	QFN31HJ-562	MY Cap	
C251	QET60JM-476	E Cap	
C252	QFN31HJ-562	MY Cap	
C253	QET60JM-107	E Cap	
C254	QET61CM-106	E Cap	
C255	QET61CM-106	E Cap	
C256	QETB0JM-108	E Cap	
C257	QET61CM-106	E Cap	
C258	QET61HM-105	E Cap	
C259	QET61HM-105	E Cap	
C260	QET61CM-106	E Cap	
C261	QET61CM-476	E Cap	
C262	QET61CM-476	E Cap	
C263	QFN31HJ-332	MY Cap	
C264	QFZ9011-473	MY Cap	
C265	QET61CM-106	E Cap	

Symbol No.	Part No.	Part Name	Description
C266	QET61CM-106	E Cap	
C267	QFZ9011-473	MY Cap	
C268	QFN31HJ-332	MY Cap	
C269	QET61CM-106	E Cap	
C270	QET61CM-106	E Cap	
C271	QET61CM-106	E Cap	
C272	QET61CM-106	E Cap	
C273	QET61CM-476	E Cap	
C274	QET61CM-106	E Cap	
C275	QET61CM-106	E Cap	
C276	QET61CM-106	E Cap	
C277	QET61CM-106	E Cap	
C278	QEN61HM-225	NP Cap	
C279	QEN61HM-225	NP Cap	
C280	QET61CM-106	E Cap	
C281	QET61CM-106	E Cap	
C282	QET61CM-106	E Cap	
C283	QET61CM-106	E Cap	
C284	QFN31HJ-103	MY Cap	
C285	QET61CM-476	E Cap	
C286	QET61HM-105	E Cap	
C287	QET61HM-105	E Cap	
C288	–	–	
C289	QET61CM-106	E Cap	
C290	QET61CM-106	E Cap	
C291	QET61CM-106	E Cap	
C292	–	–	
C293	QFN31HJ-332	MY Cap	
C294	QFN31HJ-332	MY Cap	
C295	QET61CM-476	E Cap	
C296	QET61CM-476	E Cap	
C297	QEN61CM-106	NP Cap	
C298	QEN61CM-106	NP Cap	
C299	QET60JM-476	E Cap	
C300	–	–	
C301	QET60JM-476	E Cap	
C302	QET61CM-106	E Cap	
C303	QET61CM-106	E Cap	
C304	QET61CM-106	E Cap	
C305	QET61CM-106	E Cap	
C306	QET61HM-106	E Cap	
C307	QFN31HJ-472	MY Cap	
C308	QFN31HJ-472	MY Cap	
C309	QET61CM-476	E Cap	
C310	–	–	
C311	–	–	
C312	QET60JM-227	E Cap	
C313	QFN31HJ-222	MY Cap	
C314	–	–	
C315	QFN31HJ-222	MY Cap	
C316	QFN31HJ-222	MY Cap	
C325	QET61CM-106	E Cap	
C326	QET61CM-106	E Cap	
C327	QEK61HM-105	E Cap	
C328	QFN31HJ-472	MY Cap	
C329	QFN31HJ-472	MY Cap	
L201	–	–	

(FMA)

Symbol No.	Part No.	Part Name	Description
L202	PU58494-2	Band Pass Filter	1.8 MHz
L203	PU58494	Band Pass Filter	1.4 MHz
L204	PU48530-101J	Peaking Coil	
L205	PU48530-101J	Peaking Coil	
L206	PU58308-152J	Coil	
L207	PU58308-152J	Coil	
L208	PU58308-152J	Coil	
L209	PU58308-152J	Coil	
L210	PU48530-331J	Peaking Coil	
CN201	PU49215-8	Cap Housing	
CN202	PU49215-3	Cap Housing	
CN203	PU49215-4	Cap Housing	
CN204	PU49215-5	Cap Housing	(E/EG)
	PU49215-2	Cap Housing	(EK)
CN205	PU49215-7	Cap Housing	
CN206	PU49215-12	Cap Housing	(E/EG)
	PU49215-11	Cap Housing	(EK)
CN207	–	–	
CN208	–	–	
CN209	PU49215-8	Cap Housing	
TP	PU40734	Test Pin	TP203
TP	PU50766	Test Pin	TP201,202,GND
PLT201	PQ42071-1-1	Earth Plate	
PLT202	PQ42323	Shield Plate	
PVT201	E48729-001	Plastic Rivet	
WSR201	Q03093-501	Washer	
SPC201	PQM30029-10	Spacer	

—Audio section—

Symbol No.	Part No.	Part Name	Description
IC401	TA7361AP	Integrated Circuit	
IC402	AN3991K	Integrated Circuit	
Q401	–	–	
Q402	–	–	
Q403	2SD636R,S	Transistor	
Q404	2SD636R,S	Transistor	
Q405	2SD636R,S	Transistor	
Q406	2SB641R,S	Transistor	
Q407	2SB641R,S	Transistor	
Q408	2SB641R,S	Transistor	
D401	MA165	Diode	
	or 1SS133	Diode	
D402	MA165	Diode	
	or 1SS133	Diode	
D403	MA165	Diode	
	or 1SS133	Diode	
D404	MA165	Diode	
	or 1SS133	Diode	
D405	MA165	Diode	
	or 1SS133	Diode	
D406	MA165	Diode	
	or 1SS133	Diode	
D407	MA165	Diode	
	or 1SS133	Diode	
R401	QRD161J-223	CR	
R402	QRD161J-102	CR	
R403	QRD161J-122	CR	
R404	QRD167J-475	CR	
R405	QRD161J-103	CR	
R406	QRD161J-103	CR	
R407	QRD161J-122	CR	
R408	–	–	
R409	QRD161J-223	CR	
R410	QRD161J-100	CR	
R411	QRD161J-473	CR	
R412	QRD161J-822	CR	
R413	QRD161J-104	CR	
R414	QRD161J-273	CR	
R415	QRD161J-390	CR	
R416	–	–	
R417	–	–	
R418	–	–	
R419	QRD161J-152	CR	
R420	QRD161J-392	CR	
R421	QRD161J-392	CR	
R422	QRD161J-103	CR	
R423	QVZ3518-222	VR	PB LEVEL
R424	QRD161J-562	CR	
R425	QRD161J-224	CR	
R426	–	–	
R427	–	–	
R428	QRD161J-271	CR	
R429	–	–	
R430	–	–	
R431	QRD161J-333	CR	
R432	QRD161J-562	CR	

Symbol No.	Part No.	Part Name	Description
R433	QRD161J-222	CR	
R434	QVZ3518-683	VR	BIAS LEVEL
R435	QRD161J-563	CR	
R436	QRD182J-100	CR	
R437	QRD161J-393	CR	
R438	QRD182J-220	CR	
R439	QRD161J-682	CR	
R440	QRD161J-682	CR	
R441	QRD161J-682	CR	
R442	QRD161J-682	CR	
R443	QRD161J-682	CR	
R444	QRD161J-682	CR	
R445	—	—	
R446	QRD161J-272	CR	
R447	QRD161J-561	CR	
⚠ R448	PU52108-470K	Posistor	
⚠ R449	PU52108-330K	Posistor	
⚠ R450	PU52108-330K	Posistor	
C401	QET61EM-335	E Cap	
C402	QET61EM-475	E Cap	
C403	QET61EM-475	E Cap	
C404	QET61EM-475	E Cap	
C405	QET61AM-336	E Cap	
C406	QEK61HM-474	E Cap	
C407	QFN31HJ-392	MY Cap	
C408	QET61CM-476	E Cap	
C409	QEK61HM-474	E Cap	
C410	QCS31HJ-101	C Cap	
C411	QFN31HJ-823	MY Cap	
C412	—	—	
C413	QET61EM-335	E Cap	
C414	QET61EM-335	E Cap	
C415	QFN31HJ-222	MY Cap	
C416	—	—	
C417	QFN31HJ-153	MY Cap	
C418	QET61CM-106	E Cap	
C419	—	—	
C420	QFN31HJ-102	MY Cap	
C421	QEB61HM-105	LL Cap	
C422	QFN31HJ-102	C Cap	
C423	QET61AM-476	E Cap	
C424	QET61CM-476	E Cap	
C425	QCS31HJ-561	C Cap	
C426	QFP42AJ-223	PP Cap	
C427	QET61CM-106	E Cap	
C428	QFN31HJ-102	MY Cap	
C429	QFN31HJ-332	MY Cap	
C430	QFP42AJ-333	PP Cap	
C431	QET61CM-336	E Cap	
C432	QFN31HJ-122	MY Cap	
C433	QFN31HJ-222	MY Cap	
C434	QET61HM-225	E Cap	
L401	PU58308-272J	Coil	
L402	PU48530-561K	Peaking Coil	
L403	PU48530-561K	Peaking Coil	

Symbol No.	Part No.	Part Name	Description
T401	PU57942	OSC Transformer	
T402	PU57943	OSC Transformer	
CN401	PU49215-7	Cap Housing	
TP	PU50766	Test Pin	TP402,403

5.2.3 Timer/servo/mechacon board assembly [03]
HR-D565E/EG PU11310A1-1
HR-D565EK PU11310C1-1

—Timer section—

Symbol No.	Part No.	Part Name	Description
IC1	LM393P	Integrated Circuit	
	or UPC393C	Integrated Circuit	
IC2	S-8053HLB	Integrated Circuit	
IC3	–	–	
IC4	M5278L56	Integrated Circuit	
⚠IC101	UPD7516H-016-36	Integrated Circuit	
IC102	UPD82C43C	Integrated Circuit	
IC103	RP5C15	Integrated Circuit	
Q1	–	–	
Q2	–	–	
Q3	DTC114EF	D Transistor	
Q4	2SD637R,S	Transistor	
Q5	2SD1330S	Transistor	
D1	1SS132	Diode	
	or MA167	Diode	
D2	1SS132	Diode	
	or MA167	Diode	
D3	1SS132	Diode	
	or MA167	Diode	
D4	1SS132	Diode	
	or MA167	Diode	
D5	1SS132	Diode	
	or MA167	Diode	
D6	1SS132	Diode	
	or MA167	Diode	
D7	1SS132	Diode	
	or MA167	Diode	
D8	1SS132	Diode	
	or MA167	Diode	
D9	1SS132	Diode	
	or MA167	Diode	
D10	1SS132	Diode	
	or MA167	Diode	
D11	1SS132	Diode	
	or MA167	Diode	
D12	1SS132	Diode	
	or MA167	Diode	
D13	–	–	
D14	1SS132	Diode	
	or MA167	Diode	
D15	RD6.8EB2	Zener Diode	
	or RD6.8ESB2	Zener Diode	
D101	1SS132	Diode	
	or MA167	Diode	
D102	1SS132	Diode	
	or MA167	Diode	
D103	1SS132	Diode	
	or MA167	Diode	
D104	1SS132	Diode	
	or MA167	Diode	
D105	1SS132	Diode	
	or MA167	Diode	
D106	1SS132	Diode	
	or MA167	Diode	
D107	1SS132	Diode	
	or MA167	Diode	
D108	1SS132	Diode	
	or MA167	Diode	
R1	–	–	
R2	QRD161J-103	CR	
R3	QRD161J-184	CR	
R4	QRD161J-224	CR	
R5	QRD161J-124	CR	
R6	QRD161J-274	CR	
R7	QRD161J-105	CR	
R8	QRD161J-333	CR	
R9	QRD161J-333	CR	
R10	QRD161J-334	CR	
R11	–	–	
R12	QRD161J-224	CR	
R13	QRD161J-104	CR	
R14	QRD161J-105	CR	
R15	QRD161J-103	CR	
R16	QRD161J-333	CR	
R17	QRD161J-104	CR	
R18	–	–	
R19	–	–	
R20	QRD161J-472	CR	
R21	QRD161J-273	CR	
R22	QRD161J-151	CR	
R23	QRD161J-104	CR	
R24	QRD161J-474	CR	
R25	QRD161J-684	CR	
R26	–	–	
R27	QRD161J-103	CR	
R28	–	–	
R29	–	–	
R30	QRD161J-102	CR	
R31	–	–	
R32	–	–	
R33	–	–	
R34	–	–	
R35	QRD161J-101	CR	
R36	QRD161J-102	CR	
R101	QRD161J-104	CR	
R102	QRD161J-103	CR	
R103	QRD161J-103	CR	
R104	QRD161J-103	CR	
R105	QRD161J-103	CR	
R106	–	–	
R107	QRD161J-103	CR	
R108	QRD161J-103	CR	
R109	–	–	
R110	QRD161J-104	CR	
R111	QRD161J-104	CR	
R112	QRD161J-103	CR	
R113	QRD161J-103	CR	
R114	QRD161J-103	CR	
R115	QRD161J-103	CR	
R116	QRD161J-103	CR	
R117	QRD161J-103	CR	
R118	QRD161J-103	CR	
R119	QRD161J-103	CR	
R120	QRD161J-103	CR	

Symbol No.	Part No.	Part Name	Description
R121	QRD161J-103	CR	
R122	QRD161J-104	CR	
R123	QRD161J-103	CR	
R124	QRD161J-102	CR	
R125	QRD161J-102	CR	
R126	–	–	
R127	QRD161J-103	CR	
R128	QRD161J-103	CR	
R129	QRD161J-103	CR	
R130	QRD161J-103	CR	
R131	QRD161J-472	CR	
R132	QRD161J-472	CR	
R133	QRD161J-472	CR	
R134	QRD161J-472	CR	
R135	QRD161J-103	CR	
R136	QRD161J-103	CR	
R137	–	–	
R138	QRD161J-103	CR	
R139	QRD161J-103	CR	
R140	QRD161J-103	CR	
R141	QRD161J-103	CR	
R142	QRD161J-102	CR	
R143	QRD161J-102	CR	
R144	QRD161J-102	CR	
R145	QRD161J-102	CR	
R146	QRD161J-102	CR	
R147	QRD161J-102	CR	
R148	QRD161J-102	CR	
R149	QRD161J-102	CR	
R150	–	–	
R151	–	–	
R152	–	–	
R153	–	–	
R154	QRD161J-470	CR	
R155	QRD161J-103	CR	
R156	QRD161J-103	CR	
RA101	EXB-P88224M	Resistor Array	
RA102	EXB-P84333M	Resistor Array	
RA103	EXB-P84224M	Resistor Array	
RA104	EXB-P84224M	Resistor Array	
RA105	EXB-P84224M	Resistor Array	
RA106	EXB-P84104M	Resistor Array	
C1	QET61HM-225	E Cap	
C2	QET61CM-107	E Cap	
C3	QFN31HK-104	MY Cap	
C4	QET61HM-474	E Cap	
C5	–	–	
C6	–	–	
C7	QET61HM-225	E Cap	
C8	QET61CM-107	E Cap	
C9	QET61HM-106	E Cap	
C10	QET61CM-476	E Cap	
C11	QET61CM-476	E Cap	
C12	QET61CM-336	E Cap	
C13	–	–	
C14	–	–	

Symbol No.	Part No.	Part Name	Description
C15	QET61CM-336	E Cap	
C16	QET61AM-107	E Cap	
C17	QCF11EZ-473	C Cap	
C101	–	–	
C102	–	–	
C103	–	–	
C104	PU57672-400	TR Cap	TIMER CLOCK
C105	QCS31HJ-560	C Cap	
C106	QCF31HP-103	C Cap	
C107	QCF31HP-473	C Cap	
C108	QET61CM-107	E Cap	
⚠X101	PU58513	Ceralock	
⚠X102	PU58394	Crystal	
CN1	PU49215-5	Cap Housing	
CN2	PU49215-7	Cap Housing	
CN3	PU49215-10	Cap Housing	
CN4	PU58015-012	Cap Housing	
CN5	PU49215-2	Cap Housing	
CN6	PU49215-3	Cap Housing	
CN7	PU49215-7	Cap Housing	
CN8	PU49215-11	Cap Housing	
CN9	PU49215-11	Cap Housing	
CN10	PU49215-3	Cap Housing	
CN11	PU49215-6	Cap Housing	
TP	PU45908-3	Test Pin	TP1 – 5
SPR1	PU58530	Plate Spring	

—Mechacon section—

Symbol No.	Part No.	Part Name	Description
IC201	–	–	
IC202	M50742-614SP	Integrated Circuit	
IC203	BA6238AU3	Integrated Circuit	
Q201	2SC3243D,E	Transistor	
Q202	–	–	
Q203	DTC144WF	D Transistor	
Q204	2SD637R,S	Transistor	
⚠Q205	2SD1406Y	Transistor	
Q206	DTC144EF	D Transistor	
Q207	–	–	
Q208	DTA124EF	D Transistor	(EK only)
Q209	–	–	
Q210	–	–	
Q211	–	–	
Q212	–	–	
Q213	2SD638R,S	Transistor	
Q214	DTC144EF	D Transistor	
Q215	DTC144EF	D Transistor	
D201	1SS133	Diode	
D202	–	–	
D203	1SS133	Diode	
D204	RD6.8EB2	Zener Diode	
D205	–	–	
D206	RD6.8EB2	Zener Diode	
D207	RD3.0EB2	Zener Diode	
D208	–	–	
D209	–	–	
D210	–	–	
D211	–	–	
D212	RD8.2EB2	Zener Diode	
D213	1SS133	Diode	
D214	1SS133	Diode	
D215	1SS133	Diode	
D216	1SS133	Diode	
D217	1SS133	Diode	
D218	1SS133	Diode	
D219	RD15EB1	Zener Diode	
R201	–	–	
R202	–	–	
R203	QRD161J-103	CR	
R204	–	–	
R205	–	–	
R206	–	–	
R207	QRD161J-102	CR	
R208	QRD161J-472	CR	
R209	QRD161J-103	CR	
R210	QRD161J-472	CR	
R211	QRD161J-332	CR	
R212	QRD161J-472	CR	
R213	QRD161J-103	CR	
R214	QRD161J-123	CR	
R215	QRD161J-472	CR	
R216	QRD161J-472	CR	
R217	QRD161J-103	CR	
R218	QRD161J-105	CR	

Symbol No.	Part No.	Part Name	Description
R219	–	–	
R220	–	–	
R221	–	–	
R222	–	–	
R223	–	–	
R224	QRD161J-103	CR	
R225	–	–	
R226	QRD161J-103	CR	
R227	QRD161J-103	CR	
R228	QRD161J-124	CR	
R229	QRD161J-124	CR	
R230	QRD161J-103	CR	
R231	QRD161J-332	CR	
R232	QRD161J-123	CR	
R233	QRD161J-103	CR	
R234	QRD161J-153	CR	
R235	QRD161J-122	CR	
R236	QRD161J-562	CR	
R237	QRD161J-183	CR	
R238	QRD161J-153	CR	
R239	QRD161J-682	CR	
R240	QRD161J-103	CR	
R241	QRD161J-103	CR	
R242	QRD161J-103	CR	
R243	QRD161J-103	CR	
R244	QRD161J-103	CR	
R245	QRD161J-472	CR	
R246	QRD161J-472	CR	
R247	QRD161J-472	CR	
R248	QRD161J-103	CR	
R249	QRD161J-103	CR	
R250	QRD161J-102	CR	
R251	QRD161J-103	CR	
R252	QRD161J-103	CR	
R253	QRD161J-103	CR	
R254	QRD161J-103	CR	
R255	QRD161J-103	CR	
R256	QRD161J-472	CR	
R257	QRD161J-103	CR	
R258	QRD161J-103	CR	
R259	QRD161J-103	CR	
R260	QRD161J-103	CR	
R267	QRD161J-222	CR	
R268	QRD161J-103	CR	
R269	–	–	
R270	QRD161J-0R0	CR	
R271	QRD161J-0R0	CR	
R272	QRD161J-103	CR	
⚠R273	PU52108-3R3	Posistor	
⚠	or PU52108-3R3K	Posistor	
R274	QRD161J-103	CR	
R275	QRD181J-123	CR	
RA201	RGLD5X104M	Resistor Array	
RA202	RGLD3X472M	Resistor Array	
RA203	RGLD4X103M	Resistor Array	

Symbol No.	Part No.	Part Name	Description
C201	–	–	
C202	–	–	
C203	QCF11EZ-223	C Cap	
C204	QCF11EZ-223	C Cap	
C205	QEE51CM-106	T Cap	
C206	QEK61HM-225	E Cap	
C207	QCS31HJ-390	C Cap	
C208	QCS31HJ-390	C Cap	
C209	–	–	
C210	QCF11EZ-223	C Cap	
C211	QCF11EZ-223	C Cap	
C212	QEK61CM-106	E Cap	
C213	QEK61HM-105	E Cap	
C214	–	–	
C215	QEK61HM-225	E Cap	
C216	–	–	
C217	–	–	
C218	QFN31HJ-102	MY Cap	
C219	QCF11EZ-223	C Cap	
C220	QEK61EM-475	E Cap	
C221	QFN41HJ-104	MY Cap	
L201	PU53223-101J	Peaking Coil	
L202	PU53223-101J	Peaking Coil	
⚠ CF201	PU56292	Ceramic Filter	
CN201	PU49215-9	Cap Housing	
CN202	PU49215-7	Cap Housing	
CN203	PU49215-2	Cap Housing	(E/EG)
	PU49215-3	Cap Housing	(EK)
CN204	PU49215-3	Cap Housing	
CN205	PU49215-11	Cap Housing	
CN206	PU49215-9	Cap Housing	
CN207	PU49215-11	Cap Housing	
⚠ HTS1	PQ41762	Heat Sink	for Q205
⚠ SCR1	LPSP3008Z	Screw	for Q205
⚠ SCR2	DPSP3008Z	Screw	for Q205
⚠ WSR1	Q03093-404	Washer	for Q205

—Servo section—

Symbol No.	Part No.	Part Name	Description
IC401	M51795P	Integrated Circuit	
IC402	UPC324C	Integrated Circuit	
	or IR3702	Integrated Circuit	
IC403	BU2710SA	Integrated Circuit	
IC404	UPC393C	Integrated Circuit	
Q401	2SD636Q,R,S	Transistor	
Q402	2SB641Q,R,S	Transistor	
Q403	2SD636Q,R,S	Transistor	
Q404	2SB641Q,R,S	Transistor	
Q405	2SD636Q,R,S	Transistor	
Q406	UN4112	D Transistor	
Q407	UN4213	D Transistor	
Q408	–	–	
Q409	DTA124EF	D Transistor	
Q410	DTC144EF	D Transistor	
Q411	2SD636Q,R	Transistor	
Q412	DTA124EF	D Transistor	
Q413	2SD636Q,R,S	Transistor	
Q414	DTC124EN	D Transistor	
	or DTC124ES	D Transistor	
D401	1SS133	Diode	
D402	1SS133	Diode	
D403	RD5.1EB3	Zener Diode	
D404	–	–	
D405	1SS133	Diode	
D406	1SS133	Diode	
D407	1SS133	Diode	
D408	1SS133	Diode	
R401	QRD161J-392	CR	
R402	QRD161J-564	CR	
R403	QRD161J-105	CR	
R404	QRD161J-563	CR	
R405	QRD161J-153	CR	
R406	QRD161J-105	CR	
R407	QRD161J-182	CR	
R408	QRD161J-152	CR	
R409	QRD161J-331	CR	
R410	QRD161J-394	CR	
R411	QRD161J-103	CR	
R412	QRD161J-394	CR	
R413	QRD161J-474	CR	
R414	QRD161J-473	CR	
R415	QRD161J-104	CR	
R416	QRD161J-105	CR	
R417	QRD161J-222	CR	
R418	QRD161J-105	CR	
R419	QRD161J-273	CR	
R420	QRD161J-823	CR	
R421	QRD161J-103	CR	
R422	QRD161J-681	CR	
R423	QRD161J-103	CR	
R424	QRD161J-104	CR	
R425	QRD161J-105	CR	
R426	QRD161J-474	CR	
R427	QRD161J-105	CR	
R428	QRD161J-824	CR	

(Servo)

Symbol No.	Part No.	Part Name	Description
R429	QRD161J-393	CR	
R430	QRD161J-104	CR	
R431	QRD161J-472	CR	
R432	QRD161J-561	CR	
R433	QRD161J-393	CR	
R434	QRD161J-182	CR	
R435	QRD161J-153	CR	
R436	QRD161J-103	CR	
R437	QRD161J-104	CR	
R438	QRD161J-104	CR	
R439	QRD161J-104	CR	
R440	QRD161J-104	CR	
R441	QRD161J-104	CR	
R442	QRD161J-153	CR	
R443	QRD161J-332	CR	
R444	QRD161J-223	CR	
R445	PU58064	VR	V LOCK
R446	QRD161J-103	CR	
R447	QRD161J-222	CR	
R448	QRD161J-105	CR	
R449	QRD161J-683	CR	
R450	–	–	
R451	–	–	
R452	–	–	
R453	QRD161J-473	CR	
R454	QRD161J-472	CR	
R455	QRD161J-103	CR	
R456	QRD161J-222	CR	
R457	QRD161J-103	CR	
R458	QRD161J-153	CR	
R459	QRD161J-105	CR	
R460	QRD161J-123	CR	
R461	QRD161J-822	CR	
R462	QRD161J-394	CR	
R463	QRD161J-332	CR	
R464	QRD161J-333	CR	
R465	QRD161J-123	CR	
R466	QRD161J-472	CR	
R467	QRD161J-564	CR	
R468	QRD161J-103	CR	
R469	QRD161J-473	CR	
R470	QRD161J-103	CR	
R471	QRD161J-563	CR	
R472	QRD161J-272	CR	
⚠R473	PU52108-1R0	Posistor	
⚠	or PU52108-1R0K	Posistor	
R474	QRD161J-103	CR	
R475	QRD181J-103	CR	
C401	QCF31HP-102	C Cap	
C402	QCF31HP-102	C Cap	
C403	QCF31HP-102	C Cap	
C404	QCF31HP-102	C Cap	
C405	QFN31HJ-333	MY Cap	
C406	QCS31HJ-101	C Cap	
C407	QCS31HJ-271	C Cap	
C408	QET61CM-106	E Cap	
C409	QEK61HM-105	E Cap	
C410	QET61CM-106	E Cap	
C411	QET61CM-106	E Cap	
C412	QCS31HJ-681	C Cap	
C413	QET60JM-336	E Cap	
C414	QCF31HP-103	C Cap	
C415	QCS31HJ-121	C Cap	
C416	QET61HM-105	E Cap	
C417	QEP61HM-474	NP Cap	
C418	QFN31HJ-182	MY Cap	
C419	QEP61HM-105	NP Cap	
C420	QFN31HJ-124	MY Cap	
C421	QEK61CM-106	E Cap	
C422	QEK61CM-106	E Cap	
C423	QEK61EM-475	E Cap	
C424	QEK61EM-475	E Cap	
C425	QEK61CM-106	E Cap	
C426	QEK61CM-476	E Cap	
C427	QFN31HJ-124	MY Cap	
C428	QCF31HP-102	C Cap	
C429	QCF31HP-103	C Cap	
C430	QEE51CM-106	T Cap	
C431	QCF31HP-103	C Cap	
C432	QCF31HP-103	C Cap	
C433	–	–	
C434	QFN31HJ-103	MY Cap	
C435	QFN31HJ-472	MY Cap	
C436	QCS31HJ-560	C Cap	
C437	QCS31HJ-270	C Cap	
C438	QCS31HJ-151	C Cap	
C439	QFN31HJ-683	MY Cap	
C440	QEK61CM-106	E Cap	
C441	QEK61CM-106	E Cap	
C442	QFN31HJ-333	MY Cap	
C443	QCF31HP-223	C Cap	
C444	QEK61HM-105	E Cap	
C445	QET61HM-105	E Cap	
C446	QCS31HJ-101	C Cap	
C447	QCS31HJ-101	C Cap	
C448	QEK41HM-105	E Cap	
C449	QCS11HJ-471	C Cap	
C450	QCY41HK-102	C Cap	
L401	–	–	
L402	PU48530-101J	Peaking Coil	
L403	PU55184	IFT	
⚠X401	PU58217-5	Crystal	
CN401	PU49215-2	Cap Housing	
CN402	PU49215-2	Cap Housing	
CN403	PU49215-8	Cap Housing	
CN404	PU49215-5	Cap Housing	
CN405	PU49215-3	Cap Housing	
CN406	PU49215-2	Cap Housing	
CSN1	PQ42226	Cushion	

5.2.4 (a) Tuner/IF & demodulator board assembly [04] —Tuner/IF section— HR-D565E/EG PU11297A-1

Symbol No.	Part No.	Part Name	Description
⚠ TNR1	PU35856-1-4	Tuner	
IC1	M51316BP	Integrated Circuit	
IC2	M5223P	Integrated Circuit	
IC3	M5224P	Integrated Circuit	
IC4	M50161-391SP	Integrated Circuit	
IC5	M58653P	Integrated Circuit	
Q1	2SC2636S,T	Transistor	
Q2	2SB641Q,R	Transistor	
Q3	2SD638R,S	Transistor	
Q4	2SB644R,S	Transistor	
Q5	2SD637R	Transistor	
Q6	2SD637R	Transistor	
Q7	2SD637R	Transistor	
Q8	–	–	
Q9	–	–	
Q10	–	–	
Q11	–	–	
Q12	2SD637R,S	Transistor	
Q13	2SC3327A	Transistor	
	or 2SC2878A	Transistor	
Q14	DTC144EF	D Transistor	
Q15	DTC144EF	D Transistor	
Q16	2SB810H,J	Transistor	
Q17	DTC144EF	D Transistor	
Q18	2SB810H,J	Transistor	
Q19	DTC144EF	D Transistor	
Q20	–	–	
Q21	2SB810H,J	Transistor	
Q22	2SD637R,S	Transistor	
Q23	2SB641Q,R	Transistor	
Q24	2SD637Q,R,S	Transistor	
Q25	2SD637R,S	Transistor	
Q26	DTC144EF	D Transistor	
Q27	2SB644R,S	Transistor	
Q28	2SB810J	Transistor	
Q29	DTC144EF	D Transistor	
Q30	2SD638R,S	Transistor	
D1	RD6.8ES-T1B2	Zener Diode	
D2	–	–	
D3	1SS133	Diode	
D4	1SV68	Vari Cap Diode	
D5	1SS133	Diode	
D6	LTZ-R15	LED	
	or LTZ-MR15	LED	
D7	HZT33-02	Zener Diode	
D8	1SS133	Diode	
D9	–	–	
D10	1SS133	Diode	
D11	–	–	
D12	1SS133	Diode	
D13	RD7.5EB2	Zener Diode	
	or HZ7C1	Zener Diode	
D14	RD5.6EB3	Zener Diode	
	or HZ6B3	Zener Diode	
D15	–	–	
D16	1SS133	Diode	

Symbol No.	Part No.	Part Name	Description
R1	QRD161J-331	CR	
R2	QRD161J-103	CR	
R3	QRD161J-152	CR	
R4	QRD161J-470	CR	
R5	QRD161J-681	CR	
R6	QRD161J-101	CR	
R7	–	–	
R8	QRD161J-222	CR	
R9	QRD161J-331	CR	
R10	QVZ3518-472	VR	RF AGC
R11	QRD161J-102	CR	
R12	QRD161J-153	CR	
R13	QRD161J-823	CR	
R14	QRD161J-332	CR	
R15	–	–	
R16	–	–	
R17	–	–	
R18	QRD161J-104	CR	
R19	–	–	
R20	–	–	
R21	–	–	
R22	QRD161J-332	CR	
R23	QRD161J-331	CR	
R24	QRD161J-104	CR	
R25	QRD161J-102	CR	
R26	QRD161J-103	CR	
R27	QRD161J-273	CR	
R28	QRD161J-102	CR	
R29	–	–	
R30	QRD161J-104	CR	
R31	QRD161J-472	CR	
R32	QVZ3518-332	VR	COLOUR LEVEL
R33	QRD161J-104	CR	
R34	–	–	
R35	QRD161J-102	CR	
R36	–	–	
R37	QRD161J-331	CR	
R38	–	–	
R39	QVZ3518-102	VR	Y LEVEL
R40	–	–	
R41	–	–	
R42	–	–	
R43	–	–	
R44	QRD161J-472	CR	
R45	–	–	
R46	QRD161J-472	CR	
R47	QRD161J-102	CR	
R48	QRD161J-472	CR	
R49	QRD161J-474	CR	
R50	–	–	
R51	–	–	
R52	QRD161J-103	CR	
R53	–	–	
R54	–	–	
R55	QRD161J-334	CR	
R56	QRD161J-103	CR	
R57	QRD161J-471	CR	
R58	QRD161J-103	CR	
R59	QRD161J-103	CR	
R60	–	–	

(Tuner/IF)

Symbol No.	Part No.	Part Name	Description
R61	QRD161J-223	CR	
R62	QRD161J-222	CR	
R63	QRD161J-473	CR	
R64	QRD161J-473	CR	
R65	QRD161J-103	CR	
R66	QRD161J-331	CR	
R67	—	—	
R68	QRD161J-222	CR	
R69	QRD161J-331	CR	
R70	—	—	
R71	QRD161J-103	CR	
R72	QRD161J-103	CR	
R73	QRD161J-333	CR	
R74	QRD161J-394	CR	
R75	QRD161J-154	CR	
R76	QRD161J-154	CR	
R77	QRD161J-154	CR	
R78	QRD161J-333	CR	
R79	QRD161J-333	CR	
R80	—	—	
R81	QRD161J-223	CR	
R82	QRD161J-183	CR	
R83	QRD161J-104	CR	
R84	QRD161J-103	CR	
R85	QRD161J-333	CR	
R86	QRD161J-104	CR	
R87	QRD161J-104	CR	
R88	QRD161J-332	CR	
R89	QRD161J-332	CR	
R90	QRD161J-332	CR	
R91	QRD161J-562	CR	
R92	QRD161J-472	CR	
R93	QRD161J-224	CR	
R94	QRD161J-124	CR	
R95	QRD161J-105	CR	
R96	QRD161J-392	CR	
R97	QRD161J-472	CR	
R98	QRD161J-562	CR	
R99	QRD161J-472	CR	
R100	—	—	
R101	QRD161J-105	CR	
R102	QRD161J-392	CR	
R103	QRD161J-224	CR	
R104	QRD161J-123	CR	
R105	QRD161J-683	CR	
R106	QRD161J-224	CR	
R107	QRD161J-105	CR	
R108	QRD161J-333	CR	
R109	QRD161J-273	CR	
R110	—	—	
R111	QRD161J-154	CR	
R112	QRD161J-154	CR	
R113	QRD161J-154	CR	
R114	QRD161J-222	CR	
R115	QRD161J-103	CR	
R116	QRD161J-103	CR	
R117	QRD161J-103	CR	
R118	QRD161J-103	CR	
R119	QRD161J-103	CR	
R120	QRD161J-101	CR	
R121	QRD162J-473	CR	

Symbol No.	Part No.	Part Name	Description
R122	QRD161J-103	CR	
R123	QRD161J-473	CR	
R124	QRD161J-151	CR	
R125	QRD161J-181	CR	
R126	QRD161J-332	CR	
R127	QRD161J-473	CR	
R128	QRD161J-153	CR	
R129	QRD161J-153	CR	
R130	QRD161J-153	CR	
R131	—	—	
R132	QRD161J-472	CR	
R133	QRD161J-472	CR	
R134	QRD161J-472	CR	
R135	QRD161J-472	CR	
R136	QRD161J-104	CR	
R137	QRD161J-332	CR	
R145	QRD161J-103	CR	
R146	QRD161J-102	CR	
R147	QRD161J-331	CR	
R148	QRD161J-102	CR	
R149	QRD161J-561	CR	
RA1	RNBH5A224	Resistor Network	
RA2	RNBH6A103	Resistor Array	
C1	QCF31HP-102	C Cap	
C2	QCF31HP-222	C Cap	
C3	QCF31HP-102	C Cap	
C4	QCF31HP-222	C Cap	
C5	QET61CM-106	E Cap	
C6	QET61EM-475	E Cap	
C7	QFN31HK-473	MY Cap	
C8	QCF31HP-222	C Cap	
C9	QET61CM-106	E Cap	
C10	QFN31HK-473	MY Cap	
C11	QCF31HP-222	C Cap	
C12	QCF31HP-222	C Cap	
C13	QCF31HP-222	C Cap	
C14	QCF31HP-222	C Cap	
C23	QCF31HP-102	C Cap	
C24	QCT25SH-390	C Cap	
C25	QCT25CH-120	C Cap	
C26	—	—	
C27	—	—	
C28	QCF31HP-222	C Cap	
C29	QET61CM-336	E Cap	
C30	QET61CM-106	E Cap	
C31	QCS31HJ-390	C Cap	
C32	—	—	
C33	QCT25HH-680	C Cap	
C34	QCT25CH-6R0	C Cap	
C35	QCT25RH-220	C Cap	
C36	QCF31HP-223	C Cap	
C37	QCF31HP-223	C Cap	
C38	—	—	
C39	—	—	

Symbol No.	Part No.	Part Name	Description
C40	–	–	
C41	QET61CM-106	E Cap	
C42	QET61HM-106	E Cap	
C43	–	–	
C44	QET61CM-106	E Cap	
C45	QET61HM-105	E Cap	
C46	–	–	
C47	QET61CM-106	E Cap	
C48	QET61EM-335	E Cap	
C49	QETA1CM-108	E Cap	
C50	–	–	
C51	QFN31HK-104	MY Cap	
C52	QET61CM-106	E Cap	
C53	QET61CM-106	E Cap	
C54	QFN31HK-223	MY Cap	
C55	QFN31HK-223	MY Cap	
C56	–	–	
C57	QET61EM-475	E Cap	
C58	–	–	
C59	–	–	
C60	QCF31HP-102	C Cap	
C61	QFN31HK-333	MY Cap	
C62	QFN31HK-153	MY Cap	
C63	QFN31HK-333	MY Cap	
C64	QFN31HK-153	MY Cap	
C65	QET61HM-105	E Cap	
C66	QFN31HK-333	MY Cap	
C67	QFN31HK-153	MY Cap	
C68	QFN31HK-333	MY Cap	
C69	QET61HM-474	E Cap	
C70	–	–	
C71	QET61CM-336	E Cap	
C72	QET61CM-336	E Cap	
C73	QET60JM-476	E Cap	
C74	QCS31HJ-101	C Cap	
C75	QET61HM-106	E Cap	
C76	QCS31HJ-330	C Cap	
C77	QCS31HJ-330	C Cap	
C78	QCF31HP-103	C Cap	
C79	–	–	
C80	QCF31HP-223	C Cap	
C81	QCF31HP-102	C Cap	
L1	PU57717-1R0	Peaking Coil	
L2	–	–	
L3	PU48530-6R8J	Peaking Coil	
L4	PU57717-1R5	Peaking Coil	
L5	PU48530-100J	Peaking Coil	
L6	PU48530-120J	Peaking Coil	
L7	PU48530-220J	Peaking Coil	
L8	PU48530-271J	Peaking Coil	
L9	–	–	
⚠ L10	PU49995-R22	Coil	
T1	PU55267	IFT	S. TRAP
T2	PU55268	IFT	AFC
T3	PU58063	IFT	LLD
T4	PU55184	IFT	SYNC
T5	PU57228	Coil	FTZ
CF1	–	–	
CF2	–	–	
CF3	PU32990-2	Ceramic Filter	
CF4	–	–	
CF5	PU55812	C. Resonator	
SAW1	PU34218	SAW Filter	
CN1	PU49215-107	Cap Housing	
CN2	PU49215-4	Cap Housing	
CN3	PU49215-2	Cap Housing	
CN4	PU49215-2Y	Cap Housing	
⚠ RF1	PU58024M-01	RF Converter & Mix Booster	
SC1	PU35807	Shield Case	
SC2	PU35808	Shield Cover	
SC3	PU58435	Shield Plate	

—Demodulator section—

Symbol No.	Part No.	Part Name	Description
IC201	M51365SP	Integrated Circuit	
IC202	TDA3800GS	Integrated Circuit	
Q201	2SC2636S,T	Transistor	
Q202	2SC2636S,T	Transistor	
Q203	2SC2636S,T	Transistor	
Q204	2SC2655O,Y	Transistor	
Q205	–	–	
Q206	2SC2647B,C	Transistor	
Q207	2SC2647B,C	Transistor	
Q208	–	–	
Q209	–	–	
Q210	–	–	
Q211	DTC114EF	D Transistor	
Q212	DTC114EF	D Transistor	
Q213	DTC114EF	D Transistor	
Q214	DTC114EF	D Transistor	
Q215	2SD1330S,T	Transistor	
Q216	2SD1330S,T	Transistor	
Q217	2SD637R,S	Transistor	
Q218	2SD637R,S	Transistor	
Q219	DTC144ES	D Transistor	
D201	RD10EB2	Zener Diode	
D202	1SS133	Diode	
D203	1SS133	Diode	
D204	1SS133	Diode	
D205	1SS133	Diode	
D206	1SS133	Diode	
R201	QRD161J-103	CR	
R202	QRD161J-223	CR	
R203	QRD161J-271	CR	
R204	QRD161J-103	CR	
R205	QRD161J-152	CR	
R206	QRD161J-330	CR	
R207	QRD161J-331	CR	
R208	–	–	
R209	–	–	
R210	QRD161J-101	CR	
R211	QRD161J-681	CR	
R212	QRD161J-101	CR	
R213	QRD161J-150	CR	
R214	–	–	
R215	QRD161J-331	CR	
R216	QRD161J-102	CR	
R217	QRD161J-332	CR	
R218	QRD161J-824	CR	
R219	QRD161J-561	CR	
R220	–	–	
R221	–	–	
R222	QRD161J-332	CR	
R223	–	–	
R224	QRD161J-223	CR	
R225	–	–	
R226	QRD161J-470	CR	
R227	QRD161J-561	CR	
R228	QRD161J-331	CR	

Symbol No.	Part No.	Part Name	Description
R229	–	–	
R230	QRD161J-392	CR	
R231	QVZ3518-222	VR	SEPARATION
R232	QRD161J-103	CR	
R233	QRD161J-102	CR	
R234	QRD161J-331	CR	
R235	QRD161J-101	CR	
R236	QRD161J-331	CR	
R237	–	–	
R238	QRD161J-103	CR	
R239	QRD161J-102	CR	
R240	–	–	
R241	–	–	
R242	QRD161J-331	CR	
R243	QRD161J-101	CR	
R244	QRD161J-183	CR	
R245	QRD161J-821	CR	
R246	QRD161J-102	CR	
⚠R247	QRZ0054-120	FR	
R248	QRD161J-273	CR	
R249	–	–	
R250	–	–	
R251	QRD161J-103	CR	
R252	QRD161J-103	CR	
R253	QRD143J-681	CR	
R254	QRD161J-103	CR	
R255	QRD161J-103	CR	
R256	QRD143J-681	CR	
R257	QVZ3518-222	VR	STEREO LEV (L)
R258	QRD161J-103	CR	
R259	QRD161J-103	CR	
R260	–	–	
R261	QRD161J-152	CR	
R262	QVZ3518-222	VR	STEREO LEV (R)
R263	QRD161J-103	CR	
R264	QRD161J-103	CR	
R265	QRD161J-152	CR	
R266	–	–	
R267	–	–	
R268	–	–	
R269	–	–	
R270	–	–	
R271	QRD161J-470	CR	
R272	–	–	
R273	QRD161J-103	CR	
R274	QRD161J-394	CR	
R275	QRD161J-103	CR	
R276	QRD161J-103	CR	
⚠R277	QRZ0052-120	FR	
R278	QRD161J-470	CR	
R279	–	–	
R280	–	–	
R281	QRD161J-104	CR	
R282	QRD161J-154	CR	
R283	–	–	
R284	QRD161J-473	CR	
C201	QCF31HP-222	C Cap	
C202	QCT25CH-151	C Cap	

Symbol No.	Part No.	Part Name	Description
C203	QCF31HP-222	C Cap	
C204	QCT25CH-560	C Cap	
C205	QCT25CH-150	C Cap	
C206	QCF31HP-222	C Cap	
C207	–	–	
C208	QCF31HP-102	C Cap	
C209	QCF31HP-222	C Cap	
C210	–	–	
C211	–	–	
C212	QCF31HP-222	C Cap	
C213	QCF31HP-102	C Cap	
C214	QCF31HP-222	C Cap	
C215	QCC11EK-473	BL Cap	
C216	QET61CM-476	C Cap	
C217	QCF31HP-222	C Cap	
C218	QCF31HP-222	C Cap	
C219	QET61HM-474	C Cap	
C220	–	–	
C221	QCF31HP-222	C Cap	
C222	QET61CM-476	E Cap	
C223	QCF31HP-103	C Cap	
C224	QCS31HJ-101	C Cap	
C225	–	–	
C226	QET61CM-106	E Cap	
C227	QET61HM-105	E Cap	
C228	QCF31HP-222	C Cap	
C229	QET61CM-476	E Cap	
C230	QET61CM-106	E Cap	
C231	QCT25SH-390	C Cap	
C232	QET61HM-474	E Cap	
C233	–	–	
C234	QCF31HP-222	C Cap	
C235	–	–	
C236	QCF31HP-222	C Cap	
C237	QFN31HK-392	MY Cap	
C238	QFN31HK-392	MY Cap	
C239	QFN31HK-392	MY Cap	
C240	–	–	
C241	QET61CM-106	E Cap	
C242	QET61CM-106	E Cap	
C243	QET61CM-476	E Cap	
C244	QCF31HP-223	C Cap	
C245	QCC11EK-473	BL Cap	
C246	QFP31HJ-102	M Cap	
C247	QETA1CM-477	E Cap	
C248	–	–	
C249	QETA1CM-108	E Cap	
C250	–	–	
C251	QCC11EK-473	BL Cap	
C252	QET61CM-106	E Cap	
C253	QET61CM-106	E Cap	
C254	–	–	
C255	QET61CM-107	E Cap	
C256	–	–	
C257	QET61CM-106	E Cap	
C258	QET61CM-106	E Cap	
C259	–	–	
C260	–	–	
C261	QET61CM-476	E Cap	
C262	QET61CM-106	E Cap	
C263	QET61CM-336	E Cap	

Symbol No.	Part No.	Part Name	Description
C264	QET61CM-476	E Cap	
L201	PU48530-1R0K	Peaking Coil	
L202	PU57717-1R5	Peaking Coil	
L203	PU48530-6R8J	Peaking Coil	
L204	PU48530-6R8J	Peaking Coil	
L205	PU48530-6R8J	Peaking Coil	
L206	PU48530-150J	Peaking Coil	
L207	PU58226	Band Pass Filter	
L208	PU48530-1R0K	Peaking Coil	
L209	PU48530-221J	Peaking Coil	
T201	PU55267-2	IFT	P. TRAP
T202	PU58473	IFT	33.16 MHz
T203	PU58367	Coil	5.5 MHz
T204	PU56634-2	IFT	VCO
T205	PU58224	Coil	5.74 MHz
T206	PU58225	Coil	54.7 MHz
T207	PU58540	Coil	FH TRAP
T208	PU58540	Coil	FH TRAP
CF201	PU49295	Ceramic Filter	5.5 MHz
CF202	PU49295-2	Ceramic Filter	5.5 MHz
CF203	PU32990-2	Ceramic Filter	5.5 MHz
CF204	PU52775	Ceramic Filter	5.74 MHz
CF205	PU52775-2	Ceramic Filter	5.74 MHz
SAW201	PU34218	SAW Filter	
CN201	PU49215-102	Cap Housing	
CN202	PU49215-105	Cap Housing	
B57	QRD161J-221	CR	

5.2.4 (b) Tuner/IF board assembly [04]

HR-D565EK PU22142B-1

Symbol No.	Part No.	Part Name	Description
⚠TNR1	PU35857	Tuner	
IC1	M51316BP	Integrated Circuit	
IC2	M5223P	Integrated Circuit	
IC3	M5224P	Integrated Circuit	
IC4	M50161-391SP	Integrated Circuit	
IC5	M58653P	Integrated Circuit	
Q1	2SC2636S,T	Transistor	
Q2	2SB641Q,R	Transistor	
Q3	2SD638R,S	Transistor	
Q4	2SB644R,S	Transistor	
Q5	2SD637R	Transistor	
Q6	2SD637R	Transistor	
Q7	2SD637R	Transistor	
Q8	2SD1330S,T	Transistor	
Q9	–	–	
Q10	–	–	
Q11	–	–	
Q12	2SD637R,S	Transistor	
Q13	2SC3327A	Transistor	
	or 2SC2878A	Transistor	
Q14	DTC144EF	D Transistor	
Q22	2SD637R,S	Transistor	
Q23	2SB641Q,R	Transistor	
Q24	2SD637Q,R,S	Transistor	
Q25	2SD637R,S	Transistor	
Q26	DTC144EF	D Transistor	
Q27	2SB644R,S	Transistor	
Q28	2SB810H,J	Transistor	
Q29	DTC144EF	D Transistor	
D1	RD6.8ES-T1B2	Zener Diode	
D2	–	–	
D3	1SS133	Diode	
D4	–	–	
D5	1SS133	Diode	
D6	LTZ-MR15	LED	
	or LTZ-R15	LED	
D7	HZT33-02	Zener Diode	
D8	1SS133	Diode	
D9	1SS133	Diode	
D10	1SS133	Diode	
D11	1SS133	Diode	
D12	1SS133	Diode	
D13	RD7.5EB2	Zener Diode	
	or HZ7C1	Zener Diode	
D14	RD5.6EB3	Zener Diode	
	or HZ6B3	Zener Diode	
R1	–	–	
R2	QRD161J-103	CR	
R3	QRD161J-152	CR	
R4	QRD161J-470	CR	
R5	QRD161J-681	CR	
R6	QRD161J-470	CR	

Symbol No.	Part No.	Part Name	Description
R7	–	–	
R8	QRD161J-222	CR	
R9	QRD161J-331	CR	
R10	QVZ3518-472	VR	RF AGC
R11	QRD161J-102	CR	
R12	QRD161J-153	CR	
R13	QRD161J-823	CR	
R14	QRD161J-332	CR	
⚠ R15	QRZ0052-120	FR	
R16	QRD161J-471	CR	
R17	QRD161J-331	CR	
R18	QRD161J-471	CR	
R19	QRD161J-221	CR	
R20	–	–	
R21	QRD161J-473	CR	
R22	QRD161J-332	CR	
R23	QRD161J-331	CR	
R24	QRD161J-104	CR	
R25	QRD161J-102	CR	
R26	QRD161J-103	CR	
R27	QRD161J-273	CR	
R28	QRD161J-102	CR	
R29	QRD161J-561	CR	
R30	QRD161J-104	CR	
R31	QRD161J-332	CR	
R32	QVZ3518-332	VR	COLOUR LEVEL
R33	–	–	
R34	–	–	
R35	QRD161J-471	CR	
R36	–	–	
R37	QRD161J-331	CR	
R38	–	–	
R39	QRD161J-332	CR	
R40	QVZ3518-682	VR	AUDIO LEVEL
R41	QRD161J-472	CR	
R42	QRD161J-103	CR	
R43	–	–	
R44	–	–	
R45	QRD161J-332	CR	
R46	–	–	
R47	QRD161J-102	CR	
R48	–	–	
R49	–	–	
R50	–	–	
R51	–	–	
R52	QRD161J-103	CR	
R53	–	–	
R54	–	–	
R55	QRD161J-334	CR	
R56	QRD161J-103	CR	
R57	QRD161J-471	CR	
R58	QRD161J-103	CR	
R59	QRD161J-103	CR	
R60	–	–	
R61	QRD161J-223	CR	
R62	QRD161J-222	CR	
R63	QRD161J-473	CR	
R64	QRD161J-473	CR	
R65	QRD161J-103	CR	
R66	QRD161J-331	CR	

Symbol No.	Part No.	Part Name	Description
R67	–	–	
R68	QRD161J-222	CR	
R69	QRD161J-331	CR	
R70	–	–	
R71	QRD161J-103	CR	
R72	QRD161J-103	CR	
R73	QRD161J-333	CR	
R74	QRD161J-394	CR	
R75	QRD161J-154	CR	
R76	QRD161J-154	CR	
R77	QRD161J-154	CR	
R78	QRD161J-333	CR	
R79	QRD161J-333	CR	
R80	–	–	
R81	QRD161J-223	CR	
R82	QRD161J-183	CR	
R83	QRD161J-104	CR	
R84	QRD161J-103	CR	
R85	QRD161J-333	CR	
R86	QRD161J-104	CR	
R87	QRD161J-104	CR	
R88	–	–	
R89	–	–	
R90	–	–	
R91	QRD161J-562	CR	
R92	QRD161J-472	CR	
R93	QRD161J-224	CR	
R94	QRD161J-124	CR	
R95	QRD161J-105	CR	
R96	QRD161J-392	CR	
R97	QRD161J-472	CR	
R98	QRD161J-562	CR	
R99	QRD161J-472	CR	
R100	–	–	
R101	QRD161J-105	CR	
R102	QRD161J-392	CR	
R103	QRD161J-224	CR	
R104	QRD161J-123	CR	
R105	QRD161J-683	CR	
R106	QRD161J-224	CR	
R107	QRD161J-105	CR	
R114	QRD161J-222	CR	
R115	QRD161J-103	CR	
R116	QRD161J-103	CR	
R117	QRD161J-103	CR	
R118	QRD161J-103	CR	
R119	QRD161J-103	CR	
R120	QRD161J-101	CR	
R121	QRD162J-473	CR	
R122	QRD161J-103	CR	
R123	QRD161J-473	CR	
R124	QRD161J-151	CR	
R125	QRD161J-181	CR	
R126	QRD161J-332	CR	
R127	QRD161J-473	CR	
R128	–	–	
R129	–	–	
R130	–	–	
R131	–	–	
R132	QRD161J-472	CR	
R133	QRD161J-472	CR	
R134	QRD161J-472	CR	
R135	QRD161J-472	CR	

Symbol No.	Part No.	Part Name	Description
R132	QRD161J-472	CR	
R133	QRD161J-472	CR	
R134	QRD161J-472	CR	
R135	QRD161J-472	CR	
R136	QRD161J-104	CR	
R137	QRD161J-332	CR	
R138	–	–	
R139	–	–	
R140	–	–	
R141	QRD161J-750	CR	
R142	–	–	
R143	QRD161J-474	CR	
R144	QRD161J-682	CR	
R145	QRD161J-103	CR	
R146	QRD161J-332	CR	
RA1	RNBH5A224	Resistor Network	
RA2	RNBH6A103	Resistor Network	
C1	QCF31HP-102	C Cap	
C2	QCF31HP-222	C Cap	
C3	–	–	
C4	QCF31HP-222	C Cap	
C5	QET61CM-106	E Cap	
C6	QET61EM-475	E Cap	
C7	QFN31HK-473	MY Cap	
C8	QCF31HP-222	C Cap	
C9	QET61CM-106	E Cap	
C10	QFN31HK-473	MY Cap	
C11	QCF31HP-222	C Cap	
C12	QCF31HP-222	C Cap	
C13	QCF31HP-222	C Cap	
C14	QCF31HP-222	C Cap	
C15	QCF31HP-223	C Cap	
C16	QET61CM-336	E Cap	
C17	QCS31HJ-470	C Cap	
C18	QCF31HP-102	C Cap	
C19	QFN31HK-102	MY Cap	
C20	QET61HM-105	E Cap	
C21	–	–	
C22	–	–	
C23	QCF31HP-102	C Cap	
C24	QCT25LH-560	C Cap	
C25	QCT25CH-180	C Cap	
C26	–	–	
C27	QET61CM-106	E Cap	
C28	QCF31HP-222	C Cap	
C29	QET61CM-336	E Cap	
C30	QET61CM-106	E Cap	
C31	QCS31HJ-180	C Cap	
C32	–	–	
C33	QCT25HH-151	C Cap	
C34	QCT25CH-150	C Cap	
C46	QFN31HJ-182	MY Cap	
C51	QFN31HK-104	MY Cap	
C52	QET61CM-106	E Cap	
C53	QET61CM-106	E Cap	
C54	QFN31HK-223	MY Cap	
C55	QFN31HK-223	MY Cap	
C56	–	–	
C57	QET61EM-475	E Cap	

(Tuner/IF)

Symbol No.	Part No.	Part Name	Description
C58	–	–	
C59	–	–	
C60	QCF31HP-102	C Cap	
C61	QFN31HK-333	MY Cap	
C62	QFN31HK-153	MY Cap	
C63	QFN31HK-333	MY Cap	
C64	QFN31HK-153	MY Cap	
C65	QET61HM-105	E Cap	
C66	–	–	
C67	–	–	
C68	–	–	
C69	–	–	
C70	–	–	
C71	QET61CM-336	E Cap	
C72	QET61CM-336	E Cap	
C73	QET60JM-476	E Cap	
C74	QCS31HJ-101	C Cap	
C75	QET61HM-106	E Cap	
C76	QCS31HJ-330	C Cap	
C77	QCS31HJ-330	C Cap	
C78	QCF31HP-103	C Cap	
C79	–	–	
C80	QCF31HP-223	C Cap	
C81	–	–	
C82	QET61EM-335	E Cap	
C83	QET61HM-106	E Cap	
C84	QET61CM-477	E Cap	
C85	QET61HM-105	E Cap	
C86	QCS31HJ-270	C Cap	
L1	PU57717-1R2	Peaking Coil	
L2	–	–	
L3	PU48530-6R8J	Peaking Coil	
L4	PU57717-1R5	Peaking Coil	
L5	PU48530-100J	Peaking Coil	
L6	PU48530-120J	Peaking Coil	
L7	PU48530-560J	Peaking Coil	
L8	PU48530-271J	Peaking Coil	
T1	PU55267-4	IFT	S. TRAP
T2	PU55268	IFT	AFC
T3	PU58063	IFT	LLD
T4	PU55184	IFT	SYNC
T5	–	–	
T6	PU56139-2	Low Pass Filter	
CF1	PU57902-3	Ceramic Filter	6.0 MHz
CF2	PU57707	Ceramic Filter	6.0 MHz
CF3	PU32990-3	Ceramic Filter	6.0 MHz
CF4	–	–	
CF5	PU55812	C. Resonator	4 MHz
SAW1	PU32987-11	SAW Filter	
CN1	PU49215-7	Cap Housing	
CN2	PU49215-4	Cap Housing	
CN3	PU49215-4	Cap Housing	
⚠RF1	PU58053S	RF Converter & Mix Booster	
HLD1	PU58462	Tuner Holder	

5.2.5 Display board assembly [05]

HR-D565E PU22140C-2
HR-D565EG PU22140A-2
HR-D565EK PU22140B-2

Symbol No.	Part No.	Part Name	Description
IC1	MSC1124BRS	Integrated Circuit	
Q1	DTC124EF	D Transistor	
Q2	DTA114EF	D Transistor	
Q3	DTC144EF	D Transistor	
Q4	DTA114YF	D Transistor	
Q5	2SB911MQ,R	Transistor	
D1	RD24EB2	Zener Diode	
	or RD24ESB2	Zener Diode	
D2	HZ7B	Zener Diode	
D3	SLH-34VC3F	LED	STEREO (E/EG only)
D4	SLH-34MG3F	LED	DUAL (E/EG only)
D5	SLH-34YY3F	LED	SC
D6	1SS133	Diode	
R1	–	–	
R2	QRD161J-103	CR	
R3	QRD161J-103	CR	
R4	QRD161J-103	CR	
R5	QRD161J-103	CR	
R6	QRD161J-103	CR	
R7	–	–	
R8	–	–	
R9	QRD161J-104	CR	
R10	QRD161J-151	CR	
R11	QRD161J-104	CR	
R12	QRD161J-151	CR	
R13	QRD161J-682	CR	
R14	QRD161J-102	CR	
R15	QRD161J-223	CR	
R16	QRD161J-333	CR	
RA1	EXB-P89333M	Resistor Array	
RA2	EXB-P810333M	Resistor Array	
RA3	EXB-P85333M	Resistor Array	
C1	QEK41HM-475	E Cap	
C2	QEK41CM-106	E Cap	
C3	QEK41CM-106	E Cap	
C4	QFN41HK-223	MY Cap	
C5	QER41HM-225	E Cap	
C6	QEP41HM-335	E Cap	
C7	QEP41HM-335	E Cap	
C8	QER41HM-105	E Cap	
C9	QETA1VM-476	E Cap	
C10	–	–	
C11	–	–	
C12	QEP41HM-335	E Cap	
FDP1	PU58000-2	FDP	(E/EK)
	PU58000-3	FDP	(EG)
DH1	PQ30906A-1	Display Holder Ass'y	
HD1	PQ41742	LED Holder	
SC1	PU58830	Shield Tape	
SC2	PU58830-2	Shield Tape	

5.2.6 (a) Terminal board assembly [06]
HR-D565E PU35795D
HR-D565EG PU35795A

Symbol No.	Part No.	Part Name	Description
IC1	BA7021	Integrated Circuit	
Q1	2SB643R,S	Transistor	
Q2	2SB643R	Transistor	
D1	1SS133	Diode	
	or MA165	Diode	
D2	RD7.5EB1	Zener Diode	
D3	–	–	
D4	–	–	
D5	–	–	
D6	1SS133	Diode	
	or MA165	Diode	
D7	1SS133	Diode	
	or MA165	Diode	
D8	1SS133	Diode	
	or MA165	Diode	
R1	QRD161J-393	CR	
R2	QRD161J-272	CR	
R3	QRD161J-102	CR	
R4	QRD161J-393	CR	
R5	QRD161J-562	CR	
R6	QRD161J-103	CR	
R7	QRD161J-222	CR	
R8	QRD161J-473	CR	
R9	QRD161J-103	CR	
R10	QRD161J-102	CR	
R11	QRD161J-102	CR	
R12	QRD161J-102	CR	
R13	QRD161J-102	CR	
R14	QRD161J-102	CR	
R15	–	–	
R16	QRD161J-102	CR	
R17	–	–	
R18	QRD161J-223	CR	
R19	QRD161J-822	CR	
R20	QRD161J-223	CR	
R21	QRD161J-822	CR	
R22	QRD161J-750	CR	
R30	QRD162J-103	CR	
C1	QEK61AM-336	C Cap	
C2	QEK61AM-336	C Cap	
C3	QEK61AM-336	C Cap	
C4	QCF31HP-223	C Cap	
C5	QEK61CM-476	E Cap	
RY1	PU55260	Relay	
CN1	PQ30975C	Connector Ass'y	(E)
	PQ30975A	Connector Ass'y	(EG)

5.2.6 (b) Terminal board assembly [06]
HR-D565EK PU35796A

Symbol No.	Part No.	Part Name	Description
IC1	BA7021	Integrated Circuit	
Q1	–	–	
Q2	2SB643R	Transistor	
D1	–	–	
D2	RD7.5EB1	Zener Diode	
D3	–	–	
D4	–	–	
D5	–	–	
D6	1SS133	Diode	
	or MA165	Diode	
D7	–	–	
D8	–	–	
D9	1SS133	Diode	
R1	–	–	
R2	–	–	
R3	QRD161J-102	CR	
R4	QRD161J-393	CR	
R5	QRD161J-562	CR	
R6	QRD161J-103	CR	
R7	QRD161J-222	CR	
R8	QRD161J-473	CR	
R9	QRD161J-103	CR	
R10	QRD161J-102	CR	
R11	QRD161J-102	CR	
R12	QRD161J-102	CR	
R13	QRD161J-102	CR	
R14	–	–	
R15	–	–	
R16	QRD161J-102	CR	
R17	–	–	
R18	QRD161J-102	CR	
R19	–	–	
R20	–	–	
R21	–	–	
R22	QRD161J-750	CR	
R30	QRD162J-103	CR	
C1	QEK61AM-336	C Cap	
C2	QEK61AM-336	C Cap	
C3	QEK61AM-336	C Cap	
C4	QCF31HP-223	C Cap	
C5	QEK61CM-476	E Cap	
CN1	PQ30975B	Connector Ass'y	

5.2.7 Switch board assembly [07]

HR-D565E/EG PU22141A-1
HR-D565EK PU22141B-1

Symbol No.	Part No.	Part Name	Description
⚠IC1	M50115AP	Integrated Circuit	
Q1	2SC2021Q	Transistor	
Q2	2SC2021Q	Transistor	
D1	RD5.1EB2	Zener Diode	
	or RD5.1EB3	Zener Diode	
D2	1SS133	Diode	
D3	1SS133	Diode	
R1	QRD161J-562	CR	
R2	QRD182J-102	CR	
R3	PU58374	VR	TRACKING
R4	PU58265-2	VR	REC LEVEL
R5	PU58370	VR	SHARPNESS
R6	PU58371	VR	PHONE LEVEL
R7	–	–	
R8	QRD161J-331	CR	
R9	QRD161J-331	CR	
R10	QRD161J-331	CR	
R11	QRD161J-272	CR	
R12	QRD161J-272	CR	
R13	QRD161J-272	CR	
R14	QRD161J-272	CR	
R15	QRD161J-103	CR	
R16	QRD161J-822	CR	
R17	QRD161J-122	CR	
R18	QRD161J-681	CR	
R19	QRD161J-222	CR	(E/EG only)
R20	QRD161J-272	CR	(E/EG only)
R21	QRD161J-221	CR	(E/EG only)
R28	QRD161J-103	CR	
R29	–	–	
R30	QRD161J-332	CR	
R31	QRD161J-103	CR	
C1	QCS31HJ-101	C Cap	
C2	QCS31HJ-101	C Cap	
C8	QET61CM-106	E Cap	
C9	QFN31HJ-102	MY Cap	
S4	PU53598-2	Tact Switch	STOP
S5	PU53598-2	Tact Switch	REW
S6	PU53598-2	Tact Switch	PLAY
S7	PU53598-2	Tact Switch	FF
S8	PU53598-2	Tact Switch	PAUSE/STILL
S9	PU53598-2	Tact Switch	REC
S10	PU53598-2	Tact Switch	ADUB
S11	PU53598-2	Tact Switch	INSTANT REC

Symbol No.	Part No.	Part Name	Description
S12	PU58488-1-1	Slide Switch	LEVEL IND
S13	PU58486-1-1	Slide Switch	T. MEMORY
S14	PU58486-1-1	Slide Switch	A. LIMITER
S15	–	–	
S16	PU58488-1-1	Slide Switch	S. SELECT
S17	PU58486-1-1	Slide Switch	TNR SELECT (E/EG only)
S18	PU58487-1-1	Slide Switch	HiFi OUT
S19	PU58487-1-1	Slide Switch	SELECT
S20	QSP2256-001	Push Switch	TIMER
S21	PU53598	Tact Switch	CH UP
S22	PU53598	Tact Switch	CH DOWN
⚠CF1	PU49487-2	Ceramic Filter	455 kHz
CSN1	PQ42069	Cushion	
SC1	PQ42070A	Shield Case Ass'y	
MJ1	PU58355	Mic Jack	
HJI	PU58356	Headphone Jack	

5.2.8 Preamp (FMA)/MDA (DRUM) board assembly [08] PU35542B-1

—MDA (DRUM) section—

Symbol No.	Part No.	Part Name	Description
IC1	AN6671K	Integrated Circuit	
Q1	2SB1052	Transistor	
	or 2SB941P,Q	Transistor	
D1	RD5.1ES-T1B	Zener Diode	
	or HZS5.1EB	Zener Diode	
R1	QRD161J-562	CR	
R2	QRD161J-123	CR	
R3	QRD161J-562	CR	
R4	QRD161J-222	CR	
R5	QRD161J-223	CR	
R6	QRD161J-223	CR	
R7	QRD161J-103	CR	
R8	QRD161J-222	CR	
R9	QRD161J-123	CR	
R10	QRD161J-151	CR	
R11	QRD161J-151	CR	
R12	QRD161J-102	CR	
R13	QRD161J-102	CR	
R14	QRD161J-391	CR	
R15	QRD161J-333	CR	
R16	QRD161J-562	CR	
R17	QRD161J-223	CR	
R18	QRD161J-222	CR	
R19	QRD161J-222	CR	
R20	QRX016J-R68	MFR	
	or QRX019J-R68S	MFR	
R21	QRD161J-222	CR	
C1	QFN31HK-473	MY Cap	
C2	QFN31HK-333	MY Cap	
C3	QFN31HK-473	MY Cap	
C4	QET61HM-225	E Cap	
C5	QET61HM-225	E Cap	
C6	QEK61HM-225	E Cap	
C7	QET61HM-225	E Cap	
C8	QFN31HK-152	MY Cap	
C9	QFZ9011-104	MM Cap	
	or QFJ41HK-104	MM Cap	
C10	QFN31HK-104	MY Cap	
C11	QFN31HK-104	MY Cap	
C12	QET61EM-106	E Cap	
CN1	PU57593-10	Conn Wafer Ass'y	
CN2	PU49215-108	Cap Housing	
CN3	PU49215-102	Cap Housing	

—Preamp (FMA) section—

Symbol No.	Part No.	Part Name	Description
IC101	HA11752	Integrated Circuit	
Q101	2SC2021Q,R,S	Transistor	
Q102	2SC2021Q,R,S	Transistor	
Q103	2SC2021Q,R,S	Transistor	
D101	1SS133	Diode	
R101	QRD161J-681	CR	
R102	QRD161J-272	CR	
R103	QRD161J-272	CR	
R104	QRD161J-272	CR	
R105	QRD161J-100	CR	
R106	QRD161J-221	CR	
R107	QRD161J-221	CR	
R108	QRD161J-123	CR	
R109	QRD161J-123	CR	
R110	QRD161J-561	CR	
R111	QRD161J-561	CR	
R112	QRD161J-103	CR	
R113	QRD161J-103	CR	
R114	QRD161J-102	CR	
R115	QRD161J-681	CR	
R116	QRD161J-224	CR	
R117	QRD161J-562	CR	
R118	QRD161J-472	CR	
C101	QEE41CM-105	T Cap	
C102	QCF11HP-103	C Cap	
C103	QCF11HP-103	C Cap	
C104	QCF11HP-103	C Cap	
C105	QER60JM-476	E Cap	
C106	QCF11HP-103	C Cap	
C107	QCS11HJ-471	C Cap	
C108	QCS11HJ-471	C Cap	
C109	QCF11HP-103	C Cap	
C110	QCF11HP-103	C Cap	
C111	QCF11HP-102	C Cap	
C112	QCF11HP-102	C Cap	
C113	QER61HM-105	E Cap	
C114	QER61HM-105	E Cap	
C115	QCF11HP-102	C Cap	
C116	QER61HM-224	E Cap	
C117	QCF11HP-103	C Cap	
C118	QCF11HP-102	C Cap	
C119	QCS11HJ-331	C Cap	
C120	QCF11HP-103	C Cap	
C121	QER60JM-476	E Cap	
L101	PU53223-101G	Peaking Coil	
L102	PU53223-221J	Peaking Coil	
L103	PU53223-101G	Peaking Coil	
CN101	PU49215-108	Cap Housing	
CN102	PU49215-110	Cap Housing	
TP	PU45908-2	Test Pin	TP101, 102
	PQ41720A-2	Shield Case Ass'y	

5.2.9 Power switch/IFR board assembly [11] PU35809A-1

Symbol No.	Part No.	Part Name	Description
IC1	LA7225	Integrated Circuit	
D1	SLP-981C-50	LED	POWER
	or SLR-34VC4	LED	POWER
D2	SLR-34MT4	LED	STAND BY
R1	QRD161J-331	CR	
R2	–	–	
R3	QRD161J-223	CR	
R4	–	–	
R5	QRD161J-120	CR	
R6	QRD161J-152	CR	
R7	QRD161J-122	CR	
R8	–	–	
R9	QRD161J-104	CR	
C1	QEK61EM-475	E Cap	
C2	QFN31HJ-273	MY Cap	
C3	QEK60JM-476	E Cap	
C4	QEK60JM-476	E Cap	
C5	–	–	
C6	QCS31HJ-471	C Cap	
S1	PU53598	Tact Switch	POWER
S2	PU53598	Tact Switch	EJECT
HD1	PQ40795-2	LED Holder	
SC1	PQ30658-3	Shield Case (A)	
SC2	PQ30645	Shield Plate	
[33]	**PU58117B**	**IFR PWB Ass'y**	
The following parts are included in PU58117B.			
D303	PD48PI	Photo Diode	
R304	QRD162J-104	CR	
R305	–	–	
R306	–	–	
R307	–	–	
R308	QRD162J-102	CR	
C305	QEK40JM-476	E Cap	
L301	PU57631	Trap Coil	

5.2.10 Audio/control head board [12]

Symbol No.	Part No.	Part Name	Description
	PU58016	A/CTL Head Board	
CN1	PU54537-5	Cap Housing	
CN2	PU54537-2	Cap Housing	
BRT1	PQ41646	Bracket	
SCR1	SPSH1740	Mini Screw	

5.2.11 End sensor board [13]

Symbol No.	Part No.	Part Name	Description
	PU55111	End Sensor Board	
Q1	PT-352V	Photo Transistor	
	or PN202SR	Photo Transistor	
C1	QCF11HP-103A	C Cap	

5.2.12 Mode sensor board assembly [14] PU35632A3

Symbol No.	Part No.	Part Name	Description
PS1	PU57650-1-1	Photo Sensor	
R1	QRD161J-561	CR	

5.2.13 Cassette housing board [18]

Symbol No.	Part No.	Part Name	Description
	PU56460-1-2	CASS Housing PWB	
Q1	PT-352V	Photo Transistor	Start Sensor
	or PN202SR	Photo Transistor	Start Sensor
C1	QCF11HP-103A	C Cap	
C2	QCF11HP-223A	C Cap	
C3	QCF11HP-223A	C Cap	
CN1	PU49215-109	Cap Housing	

5.2.14 Deck terminal board assembly [20]
.... PU35632A1

Symbol No.	Part No.	Part Name	Description
Q1	2SD636Q,R,S	Transistor	
D1	1SS133	Diode	
R2	QRD161J-221	CR	
R3	QRD161J-181	CR	
R4	QRD161J-822	CR	
R5	QRD161J-152	CR	
R6	QRD161J-272	CR	
R7	–	–	
R8	–	–	
R9	–	–	
R10	QRD161J-102	CR	
R11	QRD161J-272	CR	
CN1	PU43351-11	Cap Housing	
CN2	PU49215-2	Cap Housing	
CN3	PU51260-6	Cap Housing	
J1	PU57747-080	Jump Wire	

5.2.15 Take-up sensor board assembly [22]
.... PU35632A2

Symbol No.	Part No.	Part Name	Description
PS1	GP2L04B,D	Photo Sensor	
D1	HZS5.6EB1	Zener Diode	
HD1	PQ41391	Sensor Holder	

5.2.16 Mode CTL motor board [30]

Symbol No.	Part No.	Part Name	Description
	PU57725-1-2	Motor Board	
C1	QEN61HM-105	NP Cap	
C2	QCF11HP-223	C Cap	
C3	QCF11HP-223	C Cap	
CN1	PU49215-102	Cap Housing	
	PQ41430	Earth Lug	

5.2.17 Power transformer board assembly [32]
HR-D565E/EG .... ⚠ PU35798A-2
HR-D565EK .... ⚠ PU35798B-2

Symbol No.	Part No.	Part Name	Description
⚠ C101	QFZ9022-472	MM Cap	
⚠ F1	QMF51E2-R63	Fuse	
⚠ HD1	PU57505	Fuse Holder	for F1
⚠ TAB1	A74316	Tab	ACIN

5.2.18 IFR board assembly [33]
- **Refer to 5.2.9 Power switch/IFR board assembly [11]**

5.2.19 Power transistor board assembly [34]
..........PU22138A2-1

Symbol No.	Part No.	Part Name	Description
⚠ Q7	2SD1128-08	Transistor	
⚠ HTS1	PQ30761	Heat Sink	
⚠ SPC1	PU45375	Transistor Spacer	for Q7
⚠ IS1	PU41624-6	Isolation Washer	for Q7
⚠ SCR1	SPSP3006Z	Screw	for Q7
⚠ SCR2	DPSP3006Z	Screw	

5.2.20 Presetter board assembly [35]
HR-D565E/EG PU35882A
HR-D565EK PU35882B

Symbol No.	Part No.	Part Name	Description
D501	1SS133	Diode	(E/EG only)
D502	1SS133	Diode	(EK only)
D503	1SS133	Diode	(EK only)
D504	1SS133	Diode	
S501	QSP2256-004	Push Switch	(E/EG only)
S502	PU57550	Tact Switch	
S503	PU57550	Tact Switch	
S504	PU57550	Tact Switch	
S505	PU57550	Tact Switch	
S506	PU57550	Tact Switch	
S507	PU57550	Tact Switch	
S508	PU57550	Tact Switch	INITIAL
CN501	PU49215-110	Cap Housing	
TP	PU45908-2	Test Pin	TP501,502

5.2.21 Back up board assembly [37]
.... PU11310A2-1

Symbol No.	Part No.	Part Name	Description
⚠ R701	QRD161J-470	CR	
⚠ BTR1	PU58432	Battery	

5.2.22 VPS board assembly [38]
HR-D565E/EG only PU22180A-3

Symbol No.	Part No.	Part Name	Description
IC1	LM393P	Integrated Circuit	
IC2	UPC319C	Integrated Circuit	
IC3	LM339N	Integrated Circuit	
IC4	M5278L05	Integrated Circuit	
IC5	TC40H002P	Integrated Circuit	
IC6	TC40H074P	Integrated Circuit	
IC7	TC40H393P	Integrated Circuit	
IC8	TC4538BP	Integrated Circuit	
IC9	TC40H002P	Integrated Circuit	
IC10	TC40H020P	Integrated Circuit	
IC11	TC4069UBP	Integrated Circuit	
IC12	TC40H002P	Integrated Circuit	
IC13	TC40H386P	Integrated Circuit	
IC14	TC40H074P	Integrated Circuit	
IC15	MC14517BCP	Integrated Circuit	
IC16	MC14517BCP	Integrated Circuit	
IC17	UPD7507SCT-209	Integrated Circuit	
Q1	2SB641R,S	Transistor	
Q2	2SD637Q,R,S	Transistor	
Q3	2SC2636S,T	Transistor	
Q4	2SC1815Y	Transistor	
Q5	2SC2878A	Transistor	
D1	1SS133	Diode	
D2	1SS133	Diode	
D3	1SS133	Diode	
D4	RD3.0ES-T1B2	Zener Diode	
D5	1SS133	Diode	
⚠CP1	ICP-N10	Circuit Protector	
R1	QRD161J-103	CR	
R2	QRD161J-103	CR	
R3	QRD161J-102	CR	
R4	QRD161J-102	CR	
R5	QRD161J-102	CR	
R6	QRD161J-473	CR	
R7	QRD161J-102	CR	
R8	QRD161J-103	CR	
R9	QRD161J-101	CR	
R10	QRD161J-222	CR	
R11	QRD161J-473	CR	
R12	QRD161J-105	CR	
R13	QRD161J-392	CR	
R14	QRD161J-474	CR	
R15	–	–	
R16	QRD161J-123	CR	
R17	–	–	
R18	–	–	
R19	QRD161J-332	CR	
R20	QRD161J-471	CR	
R21	QRD161J-102	CR	
R22	QRD161J-222	CR	
R23	–	–	
R24	–	–	
R25	–	–	
R26	QRD161J-102	CR	
R27	QRD161J-472	CR	
R28	QRD161J-472	CR	
R29	QRD161J-392	CR	
R30	QRD161J-473	CR	
R31	QRD161J-103	CR	
R32	QRD161J-472	CR	
R33	QRD161J-103	CR	
R34	QRD161J-273	CR	
R35	QRD161J-102	CR	
R36	QRD161J-103	CR	
R37	QRD161J-103	CR	
R38	QRD161J-103	CR	
R39	QRD161J-103	CR	
R40	QRD161J-154	CR	
R41	QRD161J-154	CR	
R42	QRD161J-154	CR	
R43	QRD161J-823	CR	
R44	QRD161J-104	CR	
R45	QRD161J-104	CR	
R46	QRD161J-104	CR	
R47	QRD161J-103	CR	
R48	QRD161J-103	CR	
R49	QRD161J-103	CR	
R50	QRD161J-103	CR	
R51	QRD161J-103	CR	
R52	QRD161J-103	CR	
R53	QRD161J-103	CR	
R54	QRD161J-103	CR	
R81	QRD161J-103	CR	
R82	QRD161J-332	CR	
R83	QRD161J-472	CR	
R84	QRD161J-472	CR	
R85	QRD161J-472	CR	
R86	QRD161J-562	CR	
R87	QRD161J-104	CR	
R88	QRD161J-103	CR	
R89	QRD161J-102	CR	
R100	QRD161J-0R0	CR	
RA1	RNBH9A224	Resistor Network	
RA2	RNBH9A224	Resistor Network	
RA3	RNBH4A472	Resistor Network	
C1	QET61CM-336	E Cap	
C2	QCS31HJ-391	C Cap	
C3	QCY31HK-681	C Cap	
C4	QET61CM-106	E Cap	
C5	QET61CM-336	E Cap	
C6	QCF31HP-103	C Cap	
C7	QET61HM-105	E Cap	
C8	QET61HM-105	E Cap	
C9	QET61HM-106	E Cap	
C10	QET61CM-336	E Cap	
C11	–	–	
C12	QET61CM-336	E Cap	
C13	QCVB1CN-103	C Cap	
C14	QET61CM-336	E Cap	
C15	QET61CM-336	E Cap	
C16	QET61CM-336	E Cap	
C17	QFN31HJ-103	MY Cap	
C18	QFN31HJ-102	MY Cap	

Symbol No.	Part No.	Part Name	Description
C19	QCT25CH-5R0	C Cap	
C20	QCT25CH-150	C Cap	
C21	QCSB1HJ-100	C Cap	
C22	QCF31HP-103	C Cap	
C23	QCVB1CN-103	C Cap	
C24	QCVB1CN-103	C Cap	
C25	QCVB1CN-103	C Cap	
C26	QCVB1CN-103	C Cap	
C27	QCVB1CN-103	C Cap	
C28	QCVB1CN-103	C Cap	
C29	QCVB1CN-103	C Cap	
C30	QCVB1CN-103	C Cap	
C31	QCVB1CN-103	C Cap	
C32	QCVB1CN-103	C Cap	
C33	QCVB1CN-103	C Cap	
C34	QCT25CH-330	C Cap	
C35	QCF31HP-473	C Cap	
C82	QCSB1HJ-390	C Cap	
C83	QCBB1HJ-820	C Cap	
C84	QCY31HK-391	C Cap	
T1	PU58484	Coil	
TP	PU56008	Test Pin	TP1 – 5
SCT1	PU58863	IC Socket	IC2

5.2.23 Mic board assembly [39] PU58816A

Symbol No.	Part No.	Part Name	Description
IC1	M5218P	Integrated Circuit	
R1	QRD162J-561	CR	
R2	QRD162J-223	CR	
R3	QRD162J-333	CR	
R4	QRD162J-223	CR	
R5	QRD161J-0R0	CR	
R6	QRD181J-0R0	CR	
R7	QRD181J-104	CR	
R8	QRD161J-273	CR	
C1	QEK61CM-106	E Cap	
C2	QET61EM-475	E Cap	
C3	QCS31HJ-471	C Cap	
C4	QEK61CM-106	E Cap	
C5	QET41AM-227	C Cap	
CN1	PU49215-4	Cap Housing	
SPC1	PQM30029-2	Spacer	
SPC2	PU57215-2	Spacer	

Note: This Board Assembly is included in 5.2.2 Video/audio/FM audio board assembly [02].

5.2.24 Remote control board assembly [45] .... ⚠ PQ10244-001

Symbol No.	Part No.	Part Name	Description
IC1	M50115AP	Integrated Circuit	
X1 (Q1)	2SD636Q,R,S	Transistor	
X2 (Q2)	2SD636Q,R,S	Transistor	
X3 (Q3)	2SB822Q,R	Transistor	
D1,2	MA154WA	Diode	
D3,4	MA154WA	Diode	
D5,6	MA154WA	Diode	
D7,8	MA154WA	Diode	
D9,10	MA154WA	Diode	
D11	MA165	Diode	
D12	SE303A or LN66	LED LED	
D13	SE303A or LN66	LED LED	
R1	QRD181J-104	CR	
R2	QRD181J-474	CR	
R3	QRD181J-222	CR	
R4	QRD181J-471	CR	
R5	QRD181J-470	CR	
R6	QRD181J-1R2	CR	
R7	QRD181J-1R2	CR	
C1	QCF11HP-101	C Cap	
C2	QCF11HP-101	C Cap	
C3	QET40JM-107	E Cap	
CF1	CSB455E1	Ceramic Filter	